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A COURSE OF LECTURES,

BY

JO. BAPTIST BURSERIUS,
DE KANIFELD.

TRANSLATED FROM THE LATIN,

By WILLIAM CULLEN BROWN, M. D.

EXTRAORDINARY MEMBER, AND LATELY ONE OF THE ANNUAL PRESIDENTS OF THE ROYAL MEDICAL SOCIETY OF EDINBURGH.

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CONTENTS

OF

VOLUME FIFTH.

PART FIRST.

CHAP. I. *Of Cough*, - - - - Pag. 1
CHAP. II. *Of Spitting of blood, &c.* - - 22
CHAP. III. *Of Phthiſis Pulmonalis*, - - 45
CHAP. IV. *Of Inflammation of the Lungs, &c.* - 120
Of Impoſthume, Empyema, &c. - 170
Of Parapleuritis, - - - 181
CHAP. V. *Of Dropſy of the Cheſt, &c.* - - 187
CHAP. VI. *Of Difficult Reſpiration, &c.* - 224
CHAP. VII. *Concerning Fainting*, - - 243
CHAP. VIII. *Of Aſphyxia, &c.* - - 251
CHAP. IX. *Of Palpitation of the Heart*, - 264
CHAP. X. *Of Polypus of the Heart and Aorta*, - 281
CHAP. XI. *Of Aneuriſm and Varices of the Præcordia*, 305

PART SECOND.

CHAP. I. *Of Dyſphagia*, - - - - 347
CHAP. II. *Of Morbid Appetite, &c.* - - 368
CHAP. III. *Of Morbid Digeſtion*, - - 382
CHAP. IV. *Of Nauſea and Vomiting*, - - 389
Of Cholera, - - - 391
Of Hiccup, - - - 392
CHAP. V. *Of Looſeneſs of the Bowels*, - - 398
Of Lientery, - - - 398
Of the Cœliac Paſſion, - - 399
Of Diarrhœa, - - - 400

Of Dyſentery, - - - Pag. 401
Of Bloody Flux, - - - 404
CHAP. VI. *Of Pain of the Stomach,* - - 421
CHAP. VII. *Of Pains of the Inteſtines, &c.* - 430
CHAP. VIII. *Of Bound Belly and Ileus,* - 474
CHAP. IX. *Of Morbid States of the Hemorrhoidal Veins,* 489
CHAP. X. *Of Worms,* - - - 497
CHAP. XI. *Of Tympanites,* - - - 514
CHAP. XII. *Of Obſtructions and Swellings of the Abdominal Viſcera,* - - - - 522
CHAP. XIII. *Of Jaundice and Biliary Calculi,* - 535
CHAP. XIV. *Of Inflammation of the Liver, &c.* - 557
Of Splenitis, - - - 563
CHAP. XV. *Of Nephralgia, &c.* - - 568
CHAP. XVI. *Of Hæmaturia,* - - - 580
CHAP. XVII. *Of Diabetes,* - - - 587
CHAP. XVIII. *Of Incontinence and Suppreſſion of Urine,* 593

PART

ERRATA.

Pag. 46.	*lin.* 23.	*after* but *insert* be
48.	12.	*dele* it
71.	6.	*for* affuſion *read* effuſion
104.	25.	*for* ſoap *read* ſoup
144.	4.	*for* brain *read* lungs
191.	28.	*for* ficcatus *read* ſaccatus
194.	6.	*dele* of
374.	24.	*for* of *read* from
412.	23.	*for* rimæ *read* primæ
461.	12.	*for* pictonum *read* pictorum
498.	24.	*for* caſts *read* caſt
——	25.	*dele* they
590.	18.	*for* fat *read* feet
597.	23.	*for* happened *read* happen

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JAN - 7 1922

PART I.

DISEASES OF THE CHEST.

CHAPTER I.

OF COUGH.

1. AN involuntary *, and more or leſs violent and quickly-repeated expulſion of air from the lungs, ſtriking againſt the larynx, which is in ſome meaſure conſtricted, attended with a peculiar clangous ſound, and generally preceded by a violent inſpiration †, is commonly named *cough*. It ſeems to be occaſioned by the ſudden and violent contraction of the fibres and muſcles, which are chiefly ſubſervient to expiration, excited by irritation occaſioned to the nerves, fibres, and muſcles belonging to the organs of reſpiration, immediately affecting the internal ſenſible membrane of the larynx, trachea, and bronchia, in a particular manner, or extended to theſe parts; for it either commences in them, or is propagated thither. Nor do the lungs themſelves remain free from this irritation, on account of their being endowed not only with nerves and ſenſibility, but alſo with irritability, as Varnier ‡ has lately demonſtrated. Hence the firſt diſtinc-

tion of cough which ariſes, is that into *idiopathic*, or *pectoral*, and into *ſympathetic*, or that which is occaſioned by *conſent*.

* Although it may be ſometimes voluntarily ſuppreſſed, in conſequence of which Haller conſidered it as being a *voluntary action*, this is not always in our power.

† Haller, l. c. ‡ *Mem. de la Soc. Roy. de Med.* vol. iii. p. 39. *Mem. ſur l'Irritab. du Poum.*; where the author has very clearly ſhewn that the lungs in living animals are every where irritable; for the lobes, both internally and externally, when irritated, contract, become red and hard, retain the air, and admit no more. Theſe effects appear ſtill more manifeſt in the aſpera arteria and bronchia, on account of their having more evident muſcular fibres. It likewiſe there appears that the irritation of the lungs is extended to other parts alſo, but particularly to the abdominal muſcles, which are then thrown into more violent and frequent action.

2. The *idiopathic* ſpecies is again divided into *primary*, *ſecondary*, and *ſymptomatic* *. In like manner there are ſeveral varieties of the ſympathetic ſpecies, according to the diverſity of the parts from which it derives its origin; namely, the *ſtomachic*, *hypochondriacal*, *hepatic*, *diaphragmatic*, *inteſtinal*, *hyſterical*, *inguinal*, &c. Nay, it has not unfrequently been obſerved to proceed likewiſe from affections of the teſticles, kidneys, bladder, head, and other parts. Moſt authors, with a great ſhew of truth, have endeavoured to explain this ſympathy of the larynx, aſpera arteria, and lungs, with a good many other parts, by the power of the *par vagum*, *great ſympathetic*, or *intercoſtal* nerves, by which they influence almoſt the whole body.

* Inſtances of the *ſecondary* and *ſymptomatic* cough very frequently occur in acute diſeaſes, in gaſtric fevers, in cachexy, ſcurvy, catarrh, ſmall-pox, meaſles, ſcarlatina, the miliary diſeaſe, in a metaſtaſis of the matter of fever, itch, tinea, achores, herpes, ulcers, and, laſtly, in diſeaſes of the lungs, as peripneumony, aſthma, tubercles, vomicæ, conſumption, empyema, pleuriſy, hydrothorax, organic injuries of the præcordia, hepatitis, contuſions, and wounds of the cheſt, and luxation, fracture, wounds, &c. of the ribs.

3. Another diſtinction of cough is into *moiſt* and *dry*; and this is held to be in common to every ſpecies of cough. For when a violent concuſſion of the cheſt, and repeated expulſion of the air from the lungs, take place (1.), whatever is contained in their veſicles, in the bronchia, trachea, and larynx, is ſhaken off, and by the repeated ſhocks expreſſed from the veſſels and glands, and ſpit out. If, therefore, any fluid be brought off by cough, of whatever nature it be, we name the cough *moiſt*: but if no fluid or matter be diſcharged, we name it *dry*. But it is generally dry at the beginning, gradually becoming moiſt in the progreſs of the complaint. It is named *ferina* when it is very violent, and *lenis* when it is more mild. It is alſo named *continued*, or *intermitting*, or *periodical*, *nocturnal*, *catarrhal*, *rheumatic*, and *epidemic*, according to the period when it ariſes, or the diverſity of the cauſe by which it is occaſioned.

4. Beſides theſe varieties, which are the principal, almoſt all modern writers likewiſe make mention of a *convulſive* ſpecies, employing a new

term, although the diſeaſe which they comprehend under it may be called ancient, agreeing nearly with the *tuſſis ferina*, as, according to Hoffman, Hippocrates appears to have had it in view when he makes mention of the *tuſſis ferina*, *delaſſans*, or *ſuffocans*. Nor was it unknown in after times. For it is named by Sydenham *pertuſſis*, by the French *quinte*, or *coqueluche*, and by the Italians generally *toſſe canina*, or *aſinina*. The firſt who named it *convulſive* ſeems to have been Willis; nor did he name it ſo improperly; not becauſe it is occaſioned merely by the thorax being convulſed, which is common to almoſt every cough, but becauſe it attacks the patient with ſuch violence, as not only to powerfully conſtrict the cheſt and lungs, and hinder their expanſion, but to convulſe and ſhake almoſt the whole frame. For upon being ſeized with it, which happens at intervals, they are almoſt ſuffocated; their face ſwells and becomes livid; they tremble all over; a diſcharge of blood from the noſe, eyes, or mouth takes place; they vomit whatever they take in; they void their urine and ſtools unconſciouſly; ſometimes they remain like dead people, and without power, inſomuch that they require being ſhaken, and recalled to life by air being blown into them. Moreover, they feel a ſenſe of titillation in the larynx, which ſeems to extend to the pit of the ſtomach, and they ſend forth a peculiar ſound, as if coming from the bottom of their cheſt. But it is particularly to be obſerved, that

when coughing they continue only to expire for ſome minutes, without inſpiring; and, if at length they recover the power of inſpiring, they ſend forth a particular hiſſing, clangous noiſe, like a kind of howling, in conſequence, as I imagine, of the air entering the ſtraitened glottis, and paſſing it with difficulty. This cough generally proves diſtreſſing to infants and children, prevails epidemically, and frequently is the forerunner of meaſles and ſmall-pox. However, it does not always ſpare grown-up people.

5. The cauſes from which coryza and other catarrhal affections proceed *, on the whole, are capable of occaſioning *cough* alſo. Such are, particularly, ſudden cold, the north-wind, as well as damp, cold winds; ſudden changes of the weather; the incautious cooling of the feet or other parts; the imprudently paſſing from a warm to a cold ſituation; an epidemic acrimony floating in the air; and the like. In conſequence of which it happens, that the perſpirable matter, which ought to have paſſed out from the lungs, or proceeded from the whole ſurface of the body, being retained, and carried to the air-paſſages, or, in conſequence of an epidemic miaſma being received and abſorbed, the mucus deſtined for lining the larynx and trachea acquires a vitiated acrimony, or the lymph and blood becoming more copious and viſcid, flow to them and to the lungs, and accumulate there, and, by their

accumulation and dilatation, excite cough. Cough is likewiſe excited by morbid ſtates of the bronchial glands; by crude tubercles, ſcirrhus, vomicæ, and hydatids of the lungs; by acrid bodies paſſing or drawn into the larynx, or generated there. Such is the origin of the idiopathic and *primary* cough. Concerning the *ſecondary* ſpecies of the complaint, and particularly concerning the ſcorbutic, venereal, ſcabious, herpetic, and other ſymptomatic ſpecies of more rare occurrence, it is not proper to treat at greater length in this place.

* See Vol. IV. chap. xi. *Of Gravedo, Coryza, &c.*

THE DIAGNOSIS.

6. THE cough ariſing from the cauſes above mentioned (5.), on account of its completely agreeing with catarrh and fluxion, is commonly named *catarrhal* and *rheumatic*, that it may be diſtinguiſhed from other kinds of cough. But according as it is occaſioned by a thin or thick humour, it uſually aſſumes different ſymptoms, and requires a different method of cure. It is of conſequence, therefore, to carefully point out the ſymptoms of each cauſe, that no error may be committed in the diagnoſis and treatment. It will appear that the cough proceeds from a thin and acrid humour, by the patient's being of a warm and dry temperament, of a ſlender habit of body; by the watering and redneſs of the eyes; by the face being ſuffuſed with a red co-

lour; by the heavineſs of the head; itching of the noſtrils; frequent ſneezing; moiſt coryza, ſometimes excoriating the noſtrils and upper lip; by the conſtant titillation of the throat, and frequent inclination to cough, which are particularly ſevere in the evening; by there being none, or a ſcanty ſecretion of thin lymph, or ſaliva; by the breathing being ſomewhat difficult; by the pulſe being generally ſomewhat quick and hard; and, laſtly, by the preceding diſeaſes denoting acrimony of the fluids. On the other hand, when a thick and viſcid humour excites the cough, the patient is diſtreſſed with it more in the morning; a tenacious, whitiſh, or yellowiſh matter is coughed up; the lungs and bronchia are overwhelmed with a frothy mucus; the reſpiration is ſomewhat oppreſſed and laborious; and, while inſpiration is performed, a noiſe and hiſſing, like that of the fluid boiling within, is heard.

7. From theſe remarks, therefore, the ſeat and cauſe of cough may be collected, particularly if it have been preceded by thoſe things which chiefly affect the reſpiratory organs. It will appear more certainly that the cough is of the *catarrhal* kind, if heavineſs of the head, coryza, and ſome pain of the throat be preſent at the beginning: but that it is the *idiopathic* ſpecies will be found principally, if, in addition to the ſymptoms already enumerated, when the patient makes a full inſpiration, or ſpeaks for a conſiderable length of

time, the cough come on, or be increaſed; if the upper part of the cheſt feel as it were oppreſſed with humour; if the voice at the ſame time be hoarſe; if the expectoration be felt to proceed from a greater depth; if the thorax and ſternum be affected here and there with a prickling ſenſation; if a ſlight fever and frequent ſhiverings come on at night, while all the ſymptoms experience an aggravation in the evening, as I have elſewere ſaid of the catarrhal fever.

8. I muſt obſerve that the *convulſive* cough, of which I have made mention above (4.), is confounded by moſt writers with the *tuſſis ſtomachalis* (2.), and that it is derived from the ſtomach being loaded with an acrid and mucous colluvies. Thoſe who acquieſce in this opinion, in order to prove that the ſtomach is affected in the convulſive cough, affirm that it is generally followed by the vomiting of the ingeſta and mucous matter; that the ſenſe of titillation extends to the pit of the ſtomach; that a more hollow and clangous ſound, as if ſeated at the bottom of the ſtomach, is produced in it; that oily matters always prove hurtful, while bitters, ſtomachics, and evacuants, both when taken by the mouth, and injected by the anus, prove ſerviceable; and, laſtly, that a ſimilar cough diſtreſſes patients during the paroxyſms of ſome intermittents, the fomes of which is commonly ſuppoſed to be contained in the *primæ viæ*. But, as far as I can judge, they

ought firſt to ſhew, which will be very difficult, that the vomiting is not ſympathetic, but idiopathic; and, in like manner, that the ſenſe of titillation of the pit of the ſtomach is really idiopathic, and not fallacious, and that it to a certainty belongs to the ſtomach, and does not paſs thither from any other part. In the next place, the more hollow ſound, if in fact it be ſo, occaſioned by the cough, ſeems to prove nothing certain; as that ſound cannot be with certainty referred to the abdomen, but to the cavities of the cheſt and lungs. Beſides, it is by no means true that oily remedies always prove hurtful, and bitters and evacuants ſerviceable: for frequently the former greatly relieve this cough, although they ſometimes appear to be inefficacious, being overcome by the violence of the diſeaſe. Neither do bitters, emetics, or purgatives always prove ſerviceable, as I have frequently learnt by experience. And if they ever produce any good effect, ought this always to be aſcribed to their being friendly to the ſtomach, and to their drawing off the colluvies and cauſe of the complaint? Do they not likewiſe prove ſerviceable by their inciding and attenuating property, by giving a ſhock to the lungs, and by promoting expectoration and diaphoreſis? I am therefore diſpoſed to adopt the opinion of Home, who intirely aſcribed the difference between the convulſive cough and other idiopathic ſpecies of the complaint, to the degree

of irritation which takes place in the parts affected being greater than in common catarrh, and to the greater irritability of the whole body *.

* *Princ. Med.* l. 2. p. 3. ſect. 5. § 10.

THE PROGNOSIS.

9. COUGH is generally conſidered as being a ſlight diſeaſe; but improperly, for it frequently paſſes into other very ſerious complaints, as peripneumony, pleuriſy, hemoptyſis, angina, phthiſis pulmonalis, tubercles, vomicæ, rickets, epiſtaxis, abdominal or inguinal hernia, abortion, uterine hemorrhages, organic injuries in the præcordia, headach, watching, fatal apoplexies, in conſequence of the rupture of the veſſels of the brain, and ſimilar complaints. It is always injurious to the head and eyes. If a thick and concocted expectoration, or one ſtreaked with blood, occur in the catarrhal cough, it generally puts an end to the diſeaſe *. Sometimes a flow of ſweat, ſometimes a diarrhœa, has cured the moſt obſtinate cough. The convulſive cough not unfrequently proves fatal to children of one year old, and before the appearance of the canine teeth; in others it is not equally dangerous. Thoſe patients generally eſcape in whom an epiſtaxis occurs †. If it continue long, as frequently happens, and cannot be alleviated or allayed, it terminates in ſcrofula, rickets, and conſumption ‡ ‖.

* Van. Swiet. *in* Boerh. § 830. n. 2. † Biſſet, *Med. Eſſays and Obſerv.* p. 173. ‡ *Id. ib.* p. 178.

‖ Principally on this account, Butter, in his treatiſe on the convulſive cough, is of opinion that this diſeaſe has not its ſeat in the lungs; and adds, that he never ſaw rickets and ſcrofula proceed from a pulmonary cough. See *Edin. Med. Eſſays*, vol. i. But, with ſubmiſſion to him, others have obſerved this; nor is it difficult to be explained. Strange! did he never obſerve phthiſis pulmonalis originate from convulſive cough? a thing which is of ſuch frequent occurrence.

THE CURE.

10. EVERY cough (1. 2.) ought to be oppoſed by thoſe remedies which correct or remove its efficient cauſe. On the whole, if the cough be ſlight, and interrupted with long intervals, it is frequently diſcuſſed merely by the aid of nature, by watery, warm drink, and by a diaphoretic regimen. But if it be very diſtreſſing, and of more frequent occurrence, it requires bleeding, although fever be abſent, and ſometimes even its being repeated, that the commencement of inflammation may be prevented, or the rupture of the veſſels, which is threatened, guarded againſt. This is particularly neceſſary in patients of a ſanguine or plethoric temperament, and in thoſe who are prediſpoſed to hemoptyſis and phthiſis, in the *dry* cough (3.), and likewiſe in that which is occaſioned by an acrid and warm humour. For nothing more certainly removes and reſolves fulneſs of the veſſels, congeſtions, phlogoſis, and ſpaſms, which are conjoined with unuſually ſevere cough, than bleeding: for ſkilful practitioners obſerve and lament that, in conſequence

of this being neglected at the beginning of cough and catarrhal affections, theſe complaints very frequently gradually paſs on to phthiſis. After it, diluent and diaphoretic remedies afford the greateſt aſſiſtance; for, in conſequence of a gentle ſweat being kept up, the cauſe of the diſeaſe is drawn out and averted from the lungs.

11. But the acrid and thin humour, which occaſions the cough, is corrected and blunted by *diluent* and *thickening* remedies, as decoctions of barley and oats; by the root of liquorice, marſh-mallows, ſaleb *, and cynoſorchis; or by infuſions of tea-leaves, thoſe of wild-poppy flowers, violets, mallows, and verbaſcum; likewiſe by whey, hydrogala, the ſoup of frogs, ſnails, and river-crabs, emulſions of the oily and mucilaginous ſeeds, the cream of rice, fat oils recently expreſſed without the aid of fire, the whiteſt ſpermaceti, and the like, which likewiſe relax and allay the ſpaſmodic contractions. The following remedies act more powerfully as thickeners and ſheathers of acrimonies; namely, pure and white gum-arabic and tragacanth, of which not only mixtures and linctuſes are prepared, but likewiſe tablets and troches, with the addition of liquorice-juice or ſugar, of which the moſt celebrated are thoſe which are named *paſta althææ*. But when the diſeaſe proceeds from a thick and viſcid humour, inciding and attenuant remedies are indicated, ſuch as honey, oxymel, the root of elecampane,

frankincenſe, flowers of benzoin and ſulphur, decoctions of raiſins, turnips, betony, ſcabioſa, lung-wort, white horehound, common Virginian milk-wort, American wild vine, and burdock-root. The following remedies are ſtill more powerful; namely, Venice ſoap, gum-ammoniac, kermes mineral, the *ſulphur auratum antimonii*, diaphoretic antimony without ablution, and the like, which it may be alſo expected will be attended with the additional advantage of rouſing the torpid power of the ſolids. Some of them, however, as the Venice ſoap, gum-ammoniac, and horehound, ought to be employed with the utmoſt caution in an inflammatory diſpoſition of the blood, and in ſenſible habits, that they may not prove hurtful by their acrimony and warmth.

* The root of ſaleb is in great requeſt at preſent, and almoſt intirely diſſolves into a mucilage. Of the indigenous plants the root of cynoſorchis is ſubſtituted in its place.

12. Revellents alſo produce an excellent effect; the chief of which are pediluvium, epiſpaſtics, and bliſters. By means of them the cough is ſometimes wonderfully relieved and gradually removed, the expectoration is brought off more eaſily, the reſpiration rendered freer, and health ſhortly reſtored, in conſequence of the morbific matter being drawn to another quarter. On this account alſo are to be recommended cathartics and clyſters, in conſequence of which the belly being relaxed, I have not unfrequently known

obſtinate coughs in this manner removed. Nay, I have ſometimes ſeen them yield merely to pretty briſk cathartics. I may here bring in a remark of *Proſper Alpinus*, who mentions that many patients who, in conſequence of long-continued catarrhs, had become ſo languid and waſted, that ſcarcely any hopes of their recovery remained, were at length immediately reſtored, by being very fully purged by means of ſcammony or colocynth *.

* *De Med. Ægyptor*, l. iv. c. 6.

13. But ſometimes the cough is ſo violent, that, in ſpite of theſe remedies (10. 11. 12.), it does not permit the patient to remain at reſt. We muſt therefore have recourſe occaſionally to ſedatives, anodynes, and narcotics, in order to allay it, and procure reſt and ſleep to the patient. The water of violets, water-lilly, lettuce, and wild poppy, or infuſions or conſerves of theſe plants, and particularly emulſions of the cold ſeeds, and the ſyrup of wild poppy, or the *ſyrupus de meconio* of Sydenham, poſſeſs a gentle and harmleſs property; but a more powerful effect is produced by opium, by the *laudanum liquidum* of Sydenham, by the *laudanum nepenthes* of Quercetanus, the *pilulæ de ſtyrace* of Sylvius, by thoſe of *cynogloſſa*, and other remedies containing opium, deſcribed by every author. Some propoſe for allaying the cough, when very ſevere, inhaling, by means of a funnel, the vapour of

warm water in which the moſt emollient plants have been decocted. Nor is this remedy void of efficacy. In the employment of it, however, care muſt be taken that the ſteam may not be too warm, nor employed in patients in whom there ſeems to be a tendency to the ſpitting of blood, or who labour under too great laxity and debility of the lungs.

14. Moreover, in the *convulſive* cough (4.) experience has ſhewn that it is attended with the greateſt utility at the beginning of the diſeaſe to let blood pretty freely; to excite gentle vomiting, and even to repeat it when nothing contra-indicates it; to purge the belly with manna, rhubarb, and ſweet mercury; to produce ulceration on the ſkin by means of cantharides, that the mucous and acrid humour may be diſſolved and drawn out; at the ſame time to alleviate the cough by means of demulcent, thickening, abſorbent, and paregoric remedies. Sydenham recommends the curing of this cough merely by bleeding, epiſpaſtics, and gentle cathartics *. Huxham uſed firſt to blend mercurials with the cathartics, and afterwards adminiſtered the peruvian bark †. According to Biſſet likewiſe, a gentle emetic, conſiſting of oxymel of ſquills, rhubarb, and manna, is the beſt remedy; after which he employs the peruvian bark, particularly when the diſeaſe has taken a turn, and longer intervals between the fits of

coughing take place ‡. Of the emetics are preferred, ipecacuanha, tartar-emetic, and oxymel of ſquills ‖. The practice of theſe authors, however, is oppoſed by Burton §, who objects to phlebotomy, vomiting, and purging, excepting in very ſevere caſes; but he recommends the mixture into the compoſition of which cantharides enter. Nor is this to be wondered at, when we recollect that the phyſicians of England, and others beyond the Alps, are generally ſo much addicted to the employment of poiſons and violent remedies.

* *Epiſt.* 1. *reſponſor.* † *De Morb. Epid.* T. i. p. 75. T. ii. p. 26. 28. 178. ‡ *Med. Eſſays and Obſerv.* p. 178.. ‖ *Med. Eſſays*, vol. iv. Huxham, l. c. § *Med. Eſſays*, vol. vii.

15. The moſs of trees, and particularly that of the oak, is ſaid to be ſurpriſingly efficacious in the removal of this cough (14.). Baglivi recommends a decoction of it. A ſyrup is alſo prepared from it, to be given to children and infants *. With regard to the decoction of this moſs, Metzger † employed it unſucceſsfully; but he affirms this merely from having once made trial of it; nor did he repeat the experiment, as he ought to have done. Likewiſe the cup-moſs ‡, or lichen pyxidatus, is propoſed as a ſpecific againſt the *convulſive* cough by Van Woenſel ‖. He uſed to give it, with the greateſt advantage, ſweetened with the ſyrup of mint. Dillen, on the authority of Gerard and Willis, recommended employing the powder of it ſeveral times. Others pre-

ſcribe a decoction of it in milk, to be taken frequently in the courſe of the day. Some of the moderns prefer the extract of hemlock to other remedies. Butter § records twenty caſes in confirmation of the great efficacy of this remedy. He employed this extract ſufficiently diluted in ſome watery fluid; and began firſt with a ſmall doſe, afterwards proceeding to a greater. For a child not ſix months old he preſcribed half a grain, to be taken at different times in the courſe of a day; to one of from ſix months to two years old he gave a whole grain. To patients from two years of age to twenty, he uſed to preſcribe as many half-grains to be taken in the courſe of the day as they were years old. In patients upwards of twenty years of age, he exhibited ten grains upon the firſt day, but afterwards increaſed the doſe as it ſeemed neceſſary. If the patient had not two ſtools in the courſe of the day, he recommended adding to it magneſia, or ſal polychreſt; which he uſed to employ in patients of any age or temperament, or of either ſex, without harm. If the diſeaſe be combined with worms, dyſentery, dentition, ſmall-pox, meaſles, beſides the extract of hemlock, he does not omit the remedies calculated for theſe complaints. Nor is he afraid of employing it in pregnant women, or in perſons labouring under fever. It therefore remains for us to confirm the efficacy of this remedy, by new and accurate trials. Some practi-

tioners alſo have employed muſk with advantage, particularly in hyſterical and hypochondriacal patients, and nervous people. For it ſeems to prove ſerviceable on account of its poſſeſſing an anodyne and diaphoretic property. Gorter ¶, in a particular epidemic *convulſive* cough, experienced the utility of a ſaline and diaphoretic mixture. And, in fact, nothing is attended with greater advantage than promoting a diaphoreſis in a diſeaſe which is generally occaſioned by the retention of acrid perſpirable matter. I myſelf likewiſe, in the caſe of infants and children, have experienced great advantage from the employment of freſh butter beat up, and waſhed with the pureſt water, and made into ſmall balls, one or two of which, ſprinkled over with ſugar, were occaſionally ſwallowed. Likewiſe purified whey, or milk itſelf diluted with warm water, have more than once broken the force of the diſeaſe, and checked its progreſs, or rendered it ſafer.

* The formula of this ſyrup is to be found in the Pharmacopœia of Wirtemberg. † *Adverſ. Med.* par. 2. p. 56. ‡ The *cup-moſs*, or lichen pyxidatus, is the *muſcus pyxioides terreſtris*, *C. B.* or *lichen pyxidatus major*, *Inſtit.* R. H. Tournefort, or the *lichenoides tubuloſum pyxidatum cinereum* of Dillen. || *Hiſt. de la Soc. Roy. de Med.* vol. ii. p. 294. § *Journ. de Med.* vol. lii. p. 523. ¶ *Diſſert. de Tuſſi*, which is well deſerving of peruſal.

16. In every cough of long continuance, when the diſeaſe is drawing to a cloſe, and great part of the matter has been expectorated, or when the catarrhal humour continues to flow too long, or too copiouſly, to the lungs, on account of a par-

ticular kind of atony, and the body is waſted in conſequence of the ſpitting, gently-ſtrengthening and vulnerary medicines are to be employed. Under which head come bitters, eſpecially if the debility of the ſtomach, and relaxation of the lungs and habit ſeem to foment the cauſe of the complaint. Among theſe the peruvian bark holds the principal rank. It is likewiſe of remarkable ſervice when the cough obſerves a particular period. Home alſo, by having recourſe to this excellent remedy, uſed very quickly to remove the periodical cough. It is attended with advantage to add a little aſſes or cows milk to the decoction, or infuſion, of this bark. Many practitioners of the preſent day propoſe, for removing a long-continued cough, threatening conſumption, a decoction of the *lichen iſlandicus*, to which a demulcent and inſpiſſating property is aſcribed. It is likewiſe ſuppoſed by ſome to poſſeſs a reſolving and inciding power. Independently of its mucilaginous nature, it likewiſe poſſeſſes ſome degree of acrimony, as appears from its emetic or cathartic virtue when a ſtrong decoction is employed. I myſelf have ſometimes removed obſtinate and dry coughs by preſcribing the copious drinking of the *aqua nucerina*, or *aqua villenſis*, and by tepid bathing in ſoft water. Other practitioners, particularly the Germans, recommend Selter water, with a third part of aſſes milk, to be taken in moderate quantity every morning for ſome weeks.

17. Old people alſo are frequently troubled with cough. It is proper to oppoſe * ſuch a cough, as being generally occaſioned by a great quantity of mucus collected in the ventricles of the larynx, and in the follicles or cryptæ of the aſpera arteria and bronchia, by inciding, bitter, and attenuant remedies (2.), becauſe hoarſeneſs and gravedo occurring in people far advanced in life, according to Hippocrates †, are not concocted. But becauſe they are principally liable to catarrhal and rheumatic affections, they ought to expoſe themſelves to the air gradually, to avoid warm bed-chambers, to diminiſh their cloathing by degrees, to go into a cold bed, to live in the moſt temperate apartments, to employ cold meat and drink, to uſe much exerciſe, and, if the affection be of long ſtanding, to ſtrengthen their ſyſtem by the employment of bark and the cold-bath ‡. Thoſe who are troubled with ſalt defluxions from the head do not well admit of the employment of cathartics, leſt the noxious humour be drawn by the cellular texture to the cheſt and lungs. A diaphoreſis is more advantageouſly excited in theſe patients by a decoction of ſaunders-wood and guaiac, and the cephalic herbs ‖. It is likewiſe of ſervice in the ſpring-ſeaſon occaſionally to employ the affuſion of cold water upon their head and neck. For in this manner the defluxions from thoſe parts which are kept up by too great laxity, may be frequently prevented. Likewiſe the greateſt advantage is recei-

ved from the making of iſſues in the arms or legs by way of preventative.

* Van Swieten on Boerh. § 69. Gorter, *Diſſert. de Tuſſi*, § 50. † Aph. 40. ſect. 2. ‡ *Gazzet. d'Okremonti* 1762. n. xxxii. *edit.* Venet. || Bennet, *Theatr. Tabid.* p. 119.

18. In addition to theſe directions, the regimen proper to be employed ought to be mentioned. The food ſhould be eaſy of digeſtion. Animal food, and every thing acrid, ought to be avoided. The patient muſt abſtain from wine, and from eating ſuppers; in place of which, either milk, or a barley ptiſan, or light pottage of barley-flour ſomewhat toaſted, may be ſubſtituted. It is likewiſe neceſſary to chuſe pure air, by means of which alone the moſt obſtinate coughs are ſaid to have been ſometimes removed. Among theſe remedies, riding in a carriage, or on horſeback, the uſe of the bath, the drinking of medicated waters, decoctions of purifying woods and roots, and a milk diet, ought to be chiefly tried; to ſay nothing of cauteries, the advantage of which, in a moiſt habit of body, with bad-conditioned fluids, muſt appear evident.

19. I ſhall paſs over the ſecondary, ſymptomatic, and ſympathetic coughs. For as all of them originate from other diſeaſes, and morbid affections of other parts, they require the ſame method of cure which is calculated for the diſeaſes and cauſes from which they proceed. Their cure, therefore, depends upon that of ſcurvy, lues venerea, ſcrofula, amenorrhœa, meaſles, fe-

vers, peripneumony, pleuriſy, aſthma, hydrothorax, phthiſis, vitiated chyle in the *primæ viæ*, dyſpepſy, worms, obſtructions in the lower part of the abdomen, hyſteria, hypochondriaſis, &c.

CHAPTER II.

CONCERNING THE SPITTING OF BLOOD, ESPECIALLY HEMOPTYSIS.

20. BLOOD which is ſpit out by the mouth may be diſcharged from various parts, as the gums, tongue, palate, fauces, uvula, noſtrils, pharynx, œſophagus, ſtomach, larynx, aſpera arteria, and lungs. It is diſcharged exactly in the ſame way as thoſe already mentioned in the Diſſertation on Epiſtaxis (Vol. IV. c. xii.). But from whatever part the hemorrhage takes place, it has obtained the generic name of *hemoptyſis*. Riverius, however, induced by the authority of Galen, is of opinion that *hemoptyſis* ought to be diſtinguiſhed from *bloody ſpitting* *. Hoffman, Ludwig, Platner, and a good many other modern authors, agree in opinion with Riverius, and not without reaſon. They ſay that the word *hemoptyſis* is properly applied only to a diſcharge of pure blood iſſuing in conſiderable quantity from the lungs, and that, therefore, the word is not to be employed indiſcriminately. However, if any one be diſpoſed to apply the term *hemoptyſis* likewiſe to blood diſcharged from the larynx,

or aſpera arteria, he may do ſo with all my heart; nor ſhall I find fault with him, ſince it may be conſidered as being a ſlighter degree of hemoptyſis.

* *De Criſib.* l. i. c. 1.

21. But hemoptyſis (20.) ought by no means to be confounded with the expectoration ſtreaked with blood which pleuritic and peripneumonic patients diſcharge; nor, according to Hoffman, with that which ſucceeds to an external and violent cauſe, as a wound, contuſion, blow, or ſevere fall. For genuine hemoptyſis is an hemorrhage of the reſpiratory organs proceeding from an external cauſe, as plethora, or a particular dyſcraſy of the blood, or from the organization of the lungs being injured, or from a ſolution of their continuity. I find, moreover, that Cœlius Aurelianus, Nicolaus Piſo, and others, make a diſtinction between the *ſputum ſanguinis*, and the *fluor ſanguinis*, ſuppoſing that the former takes place when the blood is diſcharged ſparingly, or clotted, and mixed with phlegm and other humours; and that the latter takes place when the blood is brought off pure, of a bright florid colour, and in great quantity. Although this manner of diſtinguiſhing theſe affections be now obſolete, it will not be uſeleſs to have noticed what the ancients meant by theſe terms, that any confuſion or obſcurity which might occur in reading their works may be removed. For nearly the

ſame diſtinction, which is made at preſent between the *ſpitting of blood* and *real hemoptyſis*, was formerly by ſome made between the ſpitting of blood and the *fluor ſanguinis*.

THE DIAGNOSIS.

22. SINCE, therefore, blood may be diſcharged from the mouth in ſo many ways (20.), we muſt next inquire by what marks we may aſcertain from whence it proceeds. If it come from the gums, tongue, or palate, it is diſcharged ſimply by ſpitting, and, on inſpecting the mouth, it eaſily appears from what part it iſſues. Moreover, that which proceeds from the gums, as frequently happens in ſcorbutic people, is more ſerous, leſs dark in the colour, or ſometimes even blackiſh. But if it proceed from the palate, ſome titillation is felt there; and, for the moſt part, heavineſs or pain of the head, or tinnitus aurium, or throbbing of the temples and forehead, or a night's reſt have preceded its appearance. This laſt very frequently appears in the morning after ſleep. But that which proceeds from the fauces, uvula, or inſide of the noſtrils, is brought off merely by hawking, without cough. Sometimes, however, it excites a ſlight cough, or deſire to vomit, according as ſome of the blood falls either into the larynx or œſophagus. Moreover, the part can be inſpected, and ſome thing bloody is always blown from the noſe, if it deſcend from it to the fauces. But whenever blood is blown from the noſe, we muſt

not immediately conclude, that that which is discharged from the mouth comes from the fauces and noſtrils. For it frequently happens, that the blood is diſcharged from the larynx with ſuch force, that ſome part of it paſſes upwards into the cavities of the noſtrils, and may be diſcharged from them. From which examples it is quite evident, that ſuch a ſymptom is fallacious, and therefore not always to be depended upon. It likewiſe happens, as I myſelf have repeatedly obſerved, that while blood is diſcharged from the lungs, the veſſels of the noſe, in conſequence of the violent effort of coughing, are burſt at the ſame time, and thus a diſcharge of blood takes place from both theſe parts. We muſt, therefore, guard againſt raſhly concluding that both diſcharges of blood proceed from the noſe only.

23. When the blood proceeds from the œſophagus or ſtomach, it is generally thick and black; ſometimes, alſo, but very rarely, it has the appearance of water in which fleſh has been waſhed, and it is only ejected by vomiting. It is to be obſerved, however, that occaſionally, by vomiting, the blood which is chiefly diſcharged by the fauces during ſleep, and has penetrated into the ſtomach, is thrown off. But when it proceeds from the ſtomach, a ſenſe of pain, weight, anxiety, and heat, is generally perceived, and the ſymptoms which indicate an affection of the lungs and other parts, are abſent. In conſequence of a ſlight cough and motion, blood is

diſcharged from the veſſels of the larynx and aſpera arteria. Beſides, a ſenſe of itching and ſome degree of heat are felt in the trachea itſelf, and ſeem, in ſome meaſure, to riſe upwards, before the blood appears in the mouth. If the blood proceed from a deeper ſeat, or from the lungs, it is generally expelled by a more violent cough; it is florid and frothy, from the air with which it is mixed, and cauſes a peculiar ſound within. Hence Hippocrates has juſtly obſerved, "Blood which is ſpit out frothy, comes from the lungs *." But if a fit of coughing, vociferation, or any thing ſimilar, by which the lungs are known to be injured, have preceded, or if a pain †, or ſenſe of weight, be felt in the breaſt, or if the breath be drawn with difficulty, or if it be accompanied with a ſenſe of pricking or rending any where, eſpecially at the ſhoulder-blades, or if a greater quantity of air cannot be taken in without the cough and ſpitting of blood being increaſed, or excited, we can no longer doubt that the blood has been diſcharged from the lungs. In the laſt place, it is to be obſerved, that ſometimes, in conſequence of a ſlight and ſcarcely obſervable cough, blood is brought up, which, therefore, may appear to proceed from the top of the larynx, although the quantity of it, and the effects which follow, frequently ſhew that there has been a deception in the caſe, and that it has really proceeded from the lungs, or at leaſt from the bronchia.

* Aph. 13. ſect. 5. *Coac.* n. 433.

† It was formerly ſuppoſed, that the lungs were inſenſible, on account of being deſtitute of nerves, or, if any went to them, becauſe they were diſtributed merely upon their external ſurface, being derived from the *ſixth pair*, which is now called the *eighth*. On which account, moſt of the ancients taught that the ſpitting of blood took place from the lungs, without pain; which, although it ſometimes happens, is by no means an invariable occurrence. For anatomical reſearch has demonſtrated, that the lungs are provided with nerves; and that they are likewiſe endowed with ſenſibility internally, appears from the obſervations of phyſicians (par. 1.) The ancients themſelves learnt from experience, that the blood is ſometimes effuſed from the bottom of the cheſt with a particular ſenſe of pain; which, when they obſerved it to happen, that they might not bid farewel to their preconceived notion concerning the inſenſibility of the lungs, they ſaid that it was then diſcharged from the thorax, or from the pleura, which they conſidered as being highly ſenſible, not from the lungs; nor did they know, that this is intirely inconſiſtent with anatomical and phyſiological fact. For, in attempting to avoid one error, they did not perceive that they were involving themſelves in another of equal magnitude. Nor is the reality of the ſenſibility of the lungs invalidated by the authority of Veſali, though an anatomiſt otherwiſe of the greateſt celebrity, who, upon ſeveral occaſions, but principally in the caſe of Count de Bura, obſerved extenſive ſuppurations of the lungs, without their being affected with pain; which is a circumſtance of rare occurrence. But it is then probable that a ſenſe of pain is not excited, becauſe the ſenſibility of the pulmonary nerves, in conſequence of the congeſtion and compreſſion of the lungs, or any other cauſe, becomes deadened, and as it were obliterated; or becauſe their tenſion, diſtraction, and laceration is ſo ſlow as to occaſion no pain. Moreover, if there be not wanting inſtances of the abſence of pain in pulmonary complaints, we have many more of its preſence. Likewiſe the late experiments of Lorry, made upon living animals, confirm the truth of the fact, that the lungs, and eſpecially their internal parts, as the bronchia, *are really endowed with ſenſibility*; a circumſtance well worthy of remark. *Exper. ſur l'Irritab. &c.*

24. It is likewiſe of great conſequence to know, that the blood which is poured out from the lungs

is not always of a bright florid colour and frothy (23.), but ſometimes appears black, denſe, and clotted. For it puts on this appearance either after remaining ſtagnant in the lungs, and their veſicles, or while it has ſuddenly flowed out of varicoſe and aneuriſmatic veſſels, in which it had become almoſt coagulated. It is likewiſe coughed up black, and altogether ſpungy, according to Baglivi (*Rar. Affect. Hepat.*), when any part of the lungs has become ſphacelated. For which reaſons the ſymptoms enumerated ought to be conſidered conjointly, that we may be able to define with ſafety the particular ſeat from which the blood flows; and much caution is requiſite, that we may not be deceived in our judgment. For, when taken ſeverally, and when thoſe of leſs frequent occurrence are overlooked, they are apt to confound and miſlead the judgment.

25. With reſpect to the proximate cauſe of hemoptyſis, it is either the rupture of the veſſels, named in Greek, *rhexis* and *diæreſis*; or eroſion, called *diabroſis*, or the enlargement of the orifices and ſmall mouths which open inwards, denominated *anaſtomoſis*. The *rhexis* and *diæreſis* is conſidered as being the moſt frequent of them all; the *diabroſis* is of rare occurrence, happening chiefly in phthiſis and ulcers of the lungs. Generally, however, acrimony of the fluids does not occaſion diabroſis, but *ſpaſm*, in conſequence of which the veſſels becoming contracted, diſturb the regular diſtribution of the blood, forcing it vio-

lently into freer paſſages, whence, being diſtended by the impetus, they muſt neceſſarily become ruptured. Laſtly, the anaſtomoſis is of very rare occurrence, but not ſo much in women as in men, in conſequence of the defect of the uſual evacuations of blood.

26. A prediſpoſition to hemoptyſis is occaſioned by a ſlender habit of body; by a ſmall, long neck; by a narrow cheſt; by a bad conformation of it, particularly gibboſity, or depreſſion of it; by a delicate and lax habit of the whole body, but eſpecially of the lungs; by the choleric or ſanguine temperament; by an hereditary taint; by plethora; by defect of cuſtomary evacuations of blood from the noſe, uterus, or hemorrhoidal piles; by polypous concretions in the pulmonary veſſels, or in the left ſinuſes of the heart; by the preternatural compreſſion, congeſtion, or dilatation of theſe; by obſtructions of the abdominal viſcera; by conſtriction of the abdomen; by ſpaſms; by various acrimonies, eſpecially proceeding from ſcurvy, whether they ſimply occaſion irritation, or reſolve the craſis of the blood, or cauſe an eroſion of the veſſels. Youth is more prone to hemoptyſis, and the period of life from nineteen to thirty-five. Hence Hippocrates has obſerved: "Young people are liable to ſpitting of blood, conſumptions, acute fevers, epilepſy, and other complaints, but eſpecially thoſe already mentioned." (Aph. 29. ſect. 3.)

27. The complaint is excited by violent ſtrain-

ing of the cheſt or lungs in raiſing weights, in dancing, ſinging, coughing, roaring, playing upon the flute, or blowing a trumpet; at ſtool, or during parturition; by too tight binding of the neck, cheſt, or abdomen; by warm and dry air, or that which is too much rarified, as it is upon the tops of mountains, or too cold and moiſt; by exceſs in the uſe of wine, all kinds of fermented liquor, and acrid and heating things; too violent motion of the body in running, wreſtling, in playing, and in venery; the mounting of ſtairs and ſteep places; rage, joy, and other ſudden emotions of mind.

THE PROGNOSIS.

28. The ſpitting of blood which proceeds from the gums, tongue, noſtrils, uvula, and fauces, is generally void of danger; which is not the caſe with that which proceeds from the œſophagus and ſtomach, if it be copious. But of it hereafter *. I ſhall likewiſe afterwards ſpeak of the ſpitting of blood peculiar to pleuriſy and peripneumony, and which, after the turn of the diſeaſe, is a favourable prognoſtic †. Nor is a ſlight ſpitting of blood conſidered as being of much conſequence, when it proceeds from the top of the larynx, on account of ſpaſmodic contractions of the hypochondres, by which the blood is impelled thither with greater violence, and forced out.

* Chap. iv. P. II. of this volume, par. 46. 50.

† Chap. iv. par. 105. 116. 117.

29. But genuine hemoptyſis is never free of danger. Hippocrates took notice of this when he obſerved: "A diſcharge of blood from the mouth, of whatever kind it may be, is bad." (Aph. 15. ſect. 7.) Likewiſe that which is black, clotted, and ſpungy (24.), is unfavourable, as importing aneuriſms, varices, or ſphacelus. In particular, great danger is occaſioned by a copious diſcharge of blood from the lungs, becauſe it may either immediately prove fatal, or, by the exceſſive quantity of it collected within the veſicles or bronchia themſelves, it may occaſion ſuffocation, or deprive the heart of the uſual influx of blood, or oppreſs the lungs by its bulk or weight, and thus give riſe to a ſudden and fatal ſyncope, or aſphyxia. But if theſe accidents by good fortune be eſcaped, there is at leaſt reaſon to apprehend very ſevere and incurable ulcers in the lungs, and ſtill more ſo the more impure the body is, or if it at the ſame time labour under a bad ſtate of the fluids, or any diſeaſe which is the conſequence of ſuch a ſtate. Hippocrates has therefore with juſtice obſerved; "The ſpitting up of pus mixed with blood is a bad ſign." (Aph. 15. ſect. 7.) But this is principally true if a ſlight fever at the ſame time come on, which never wholly leaves the patient, called *a ſlow amphemerina*. For in that caſe phthiſis is ſaid to be approaching.

30. That which deſcends to children and grandchildren, as it were hereditarily, is much more

dangerous and difficult of cure. That ſpecies alſo is attended with more danger which originates from the rupture of a large veſſel, or from a deep ſeat, than one occaſioned by the rupture of a ſmaller veſſel, or proceeding from a more ſuperficial ſeat. The former diſcharges a greater quantity of blood, the latter a ſmaller; ſo that the more copious ſpitting of blood denotes more danger, and the more ſparing leſs. Upon the whole, that ſpecies is reckoned to be more ſevere and dangerous which is occaſioned by *diabroſis*. At the beginning of it, indeed, the blood is diſcharged ſparingly, and is of a ſalt taſte, but is gradually poured out in greater quantity, in conſequence of the mouth of the veſſel being enlarged by the eroſion which takes place. An inveterate and chronic hemoptyſis, or that which ſupervenes upon phthiſis pulmonalis, defies the power of medicine.

31. Nevertheleſs, experience has frequently ſhewn, that not a few, to whom timely aſſiſtance is given, and who rigorouſly abide by the regulations with reſpect to diet preſcribed to them, eſcape from genuine hemoptyſis, even when it is copious, and returns. But Platner adviſes allowing it to go on for the firſt three days. Likewiſe leſs trouble is occaſioned by the hemoptyſis proceeding from air which is too much rarified, or from the ſuppreſſion of the catamenia, or from defect of any other evacuation, as it generally takes place either by *anaſtomoſis*, or *exſudation*. Leſs

apprehenſion alſo is excited by the ſpecies which proceeds from vociferation, or violent motion, than by that which is cauſed by *diabroſis*. In general, when patients labouring under hemoptyſis are ſlightly affected, without fever, cough, and pain, and when thin blood is ſpit out for fourteen days, it affords a favourable mark. But it is a bad ſymptom, as we are told in the *Coacæ Prænotiones* (N. 427.), when the patients labour under a ſmart fever, and cough, or pain, and always ſpit up freſh blood.

THE CURE.

32. HEMOPTYSIS requires nearly the ſame method of treatment as that which I have recommended when treating of epiſtaxis (Vol. IV. c. xii.); and if there be any difference between them, it ariſes from the part affected, from the cauſe, or from an impending diſeaſe. When, therefore, blood is forcibly diſcharged from the lungs, it muſt immediately be drawn in conſiderable quantity from a vein, the extent to which it ſhould be taken being regulated by the patient's ſtrength, pulſe, age, temperament, and habit; and it may be advantageouſly repeated, particularly when the hemoptyſis returns, if the patient be of a full habit of body, warm, and feveriſh. It is a matter of no great moment from what part it be drawn, provided it be done quickly. Many, however, conſider it as more adviſeable firſt to open the inferior,

and afterwards the ſuperior and neighbouring veins. Nor ought a perſon to be deterred from opening a vein by the quantity of blood diſcharged, provided the pulſe do not fall, nor the veſſels appear empty. We muſt certainly have recourſe to this powerful remedy with caution, but not timorouſly, unleſs manifeſt colliquation, thinneſs, diſſolution, or corruption of the blood, contra-indicate it. For the appulſe of the blood to the lungs, and the congeſtion there, are diminiſhed, and the veſſels being leſs diſtended, are enabled to contract themſelves, and become united. The prophylaxis alſo, with reſpect to perſons who have an hereditary tendency to conſumption *, conſiſts almoſt intirely in this. Nor ought the other kinds of revulſion, of which I have repeatedly ſpoken, as cupping-glaſſes, ligatures, and clyſters, to be omitted, in order to obtain the deſired end.

* Vid. *Diſſert. de Ratione Veneſectionis in Hæmoptoicis in Adverſar. Med. Pract.* Ludwig. P. I. p. 145. Likewiſe Erneſti Valentini Cohauſenii *Diſſertatio de Noxa Timiditatis in Hæmoptyſeos Curatione;* which may be found in *Act. N. C.* vol. i. p. 33.

33. In the mean time the patient ought to recline in bed, with his head and cheſt raiſed high, as if he were ſitting, and ought to refrain from all kind of motion of body, particularly any exertion of the cheſt, as well as emotions of mind; and he ought to avoid even ſpeaking, or at leaſt to ſpeak whatever he wiſhes to ſay in a low voice, and as briefly as poſſible. He ought to ſleep in

a chamber rather inclining to cold, to be ſlightly covered in bed, not to derange the circulation of the blood by too tight cloaths, and he ought, with all poſſible care, to avoid coughing, as well as warm drink or food.

34. Internally thoſe remedies ſhould be adminiſtered which are oppoſed to the well-known cauſes of the complaint. Exceſſive heat of the blood, as well as too great tenuity of it, may be allayed by means of cold water, emulſions of the farinaceous ſeeds, nitre, abſorbent earths, ſaturated with ſome vegetable acid, and, laſtly, by means of the mineral acids. Of theſe various formulæ are prepared, according as the circumſtances and taſte of the patient appear to require. I may obſerve, however, that acids for the moſt part not only aggravate the cough, but even excite it; than which nothing is more pernicious. When this happens, as I have frequently obſerved, they muſt immediately be laid aſide. This inconvenience, however, may in ſome meaſure be avoided, by diluting the acids which we wiſh to employ, and mitigating them by means of mucilaginous and oily remedies, by blunting their acrimony by means of abſorbents, and by the addition of ſome opium. It is therefore with reaſon, as I think, that the mixture named *Sylviana*, from its inventor, is held in eſtimation. Its compoſition is as follows:—Rec. *Aq. plantag. unc.* vj.; *acet. diſtil. unc. ſemis*; *corallior. rubr. et ter. ſigillat. ſingul.*

drach. dimid.; opii gran. ij.; *ſyrup. de mecon. unc.* ſ. *de qua ſubinde cochlear. dari conſuevit.* By means of this mixture the heat of the blood is allayed, and if any clotted blood happen to ſtick in the pulmonary veſicles, it is ſuppoſed to be diſſolved by it, while the cough and ſpaſms are allayed and prevented.

35. The ſpitting of blood, which is not unfrequently occaſioned in hypochondriacal and hyſterical people (38.) by ſpaſms in the lower part of the belly and thorax, is ſuppreſſed principally by opium, by oily and emollient injections, by warm pediluvium, and other antiſpaſmodics. Among the preparations of opium, the principal in this complaint are ſaid to be the *laudanum cydoniatum*, the vegitable æthiops, the *diaſcordium* of Fracaſtor, and Dekers's pills, which ſeem to be likewiſe poſſeſſed of ſome aſtringent property. Acrimony of the fluids, if the complaint be occaſioned by it, ought to be oppoſed by means of mucilaginous, farinaceous, fatty, oily remedies, by gum-arabic, and gum-tragacanth, of which the two laſt mentioned likewiſe poſſeſs an agglutinant virtue. Clerc (*Hiſt. de l'Homme Malad.* vol. ii. p. 36.) makes mention of an hemoptyſis having been cured, which had continued to return every now and then for three years, accompanied with a dreadful cough, by means of a remedy which conſiſted of two pounds of barley-water, and an ounce of gum-arabic diſſolved in it, employed for ſome length of time. The Profeſſor of Medicine at Bologna, whoſe pupil I was for ſeveral years,

uſed to mention in his lectures, that he had recovered from an hemoptyſis, ariſing from acrimony of the blood, with which he had been attacked when a young man, merely by the copious and long-continued employment of the the powder of gum-arabic, and arrived at ſuch advanced old age as falls to the lot of few individuals.

36. In no complaint more frequently than in hemoptyſis does the degree of danger, and apprehenſion both of the patient and by-ſtanders, oblige the phyſician, however reluctantly, to have ſpeedy recourſe to *aſtringents*. But theſe, if they be really ſuch, either by no means appear to reach to the veſſels which are ruptured, or in any other way opened, or, if they do, do not ſeem to be at all ſafe; becauſe, by means of them, congeſtions, tubercles, vomicæ, and, laſtly, phthiſis, may be occaſioned. For the very delicate and irritable texture of the parts cannot bear their violence without the veſſels becoming corrugated, ſpaſmodically contracted, and obſtructing the free circulation of the blood. On which account Cohauſen, after ſeveral other celebrated phyſicians, very prudently warns us not to have recourſe to them too haſtily.

37. However, ſome particular remedies, when it ſeems a proper time for ſtopping the hemorrhage, on this account are univerſally celebrated. Among theſe the principal rank is held by the juice of the *urtica*, eſpecially of that named *mor-*

tua, that of plantain, comfrey, and ground-ivy. Some are doubtful whether theſe juices prove aſtringent, or reſolving and cooling, or act in any other ſimilar way. In like manner the *fungus Melitenſis* is very remarkable for its aſtringent property, as is affirmed by ſome authors, not apt to be over credulous, who have tried its effects upon the blood; nor have they dared to deny to it the property which is every where aſcribed to it, namely, that whilſt it cloſes the mouths of the veins, it leaves the blood intirely untouched (*Comm. Acad. Bon.* vol. i. p. 158.). Which, if I miſtake not, is a proof that its power of ſtopping the flow of the blood is not confirmed by ſufficiently extenſive obſervations. In hemoptyſis Alexander Trallianus uſed to give every day four ſcruples of blood-ſtone, not only to check the ſpitting of blood, already preſent, but likewiſe to prevent it. Geſner, Eraſtus, Crato, Riverius, and others highly extolled the electuary for the ſpitting of blood invented by Haelidæus of Padua *, which, however, is not ſo remarkable for its aſtringent as for its anodyne property, and for allaying cough. But if there be any thing in its compoſition which to ſome people appears objectionable, it is clearly the ſuſpicious efficacy of the ſeeds of hyoſcyomus, which derange the brain, and may induce ſtupor, nay, madneſs. For ſome years back it has begun to be employed for the removal of all hemorrhages; and a particular water for the healing of wounds, which is

ſold by Juliano Landi, an apothecary at Rome, is greatly celebrated. At Milan this ſpecific is ſo highly eſteemed, that it is uſed with the greateſt confidence, both internally and externally, in every ſpecies of hemorrhage, but more particularly in every hemoptyſis. Our phyſicians univerſally declare that this remedy is productive of wonderful effects, inſomuch that they never omit its employment in the cure of hemorrhages. Experience, I own, has more weight than any reaſoning, however ſpecious. But how difficult a thing is it to inſtitute an experiment properly! How much good ſenſe, caution, and ſkill is requiſite in the conducting of experiments! How much acuteneſs of judgment and impartiality is neceſſary in diſtinguiſhing the effects of cauſes from others produced by other intervening cauſes, that we may not be led into error, and ourſelves deceived by our own experiments! But to omit no particular, the compoſition of the *aqua vulneraria Romana* † is clearly ſuch, that if a perſon know the phyſical and chemical properties of the different ingredients, and conſider what will be the reſult of their chemical union, he ought to diſregard its praiſes, and to intirely diſtruſt its aſtringent properties. Nay, if a chemical proceſs ſo frequently repeated produced any effect, and imparted to the diſtilled water the properties of the plants and ſalts, this water, ſo far from being ſerviceable, would rather prove pernicious in the treatment of hemoptyſis.

* *The Electuarium ad ſputum ſanguinis* Hælidæi Paduani.---Rec. Semin. hyoſcyom. papav. albi, ana drach. x. Terræ ſigillat. corall. rubr. an. drach. v. Sachar. roſat. antiq. q. 5. M. f. c. s. q. Syrup. roſar. ſimpl. electuar. de quo detur drach. una bis in die.

† The *Aqua vulneraria Landini*, or *aqua Romana*.---Rec. Succ. rec. origani, ſanniculæ, betonicæ, verbenæ, ſedi ſive ſempervivi, pimpinellæ, millefolii, an. unc. vj. Succi mari unc. iij. Sal. alkali, gemm. an. unc. vj. Crem. tart. pulv. unc. iv. Aceti ſtillat. lib. j. in quo ſolv. aloes unc. j. cum dimidia.---In ſucco betonicæ ſolv. ſal gemmæ.---In ſucco verbenæ et millefolii ſal alkali. In ſucco pimpinellæ crem. tart.---Omnia ponantur in retorta, et digerantur per dies tres, dein diſtilla s. a.---Caput mort. pulveriſ. in mortar. et ſuper-affundatur diſtillat. denuo ponatur in digeſtione per dies tres, et diſtill. ut ſupra. Replicetur pro tertia vice digeſtio, et diſtill. et liquor a tertia diſtill. obtentus ſervetur in vaſis bene obſignatis. Uſus; in ſputo ſanguinis datur cochlear. unum ſingulis ternis horis; interdum ſufficit cochlear. unum mane et veſperi. Sed in vulneribus adhibetur frequentius, ſpleniis aqua iſta imbutis, aut injectione ter quater in die, abluta prius parte ſauciata quavis vice per vinum calidum.

38. The following remedies are conſidered as being ſafer, and approved by the experience and conſent of phyſicians, namely, ſugar of roſes, conſerve of red roſes, ſyrup of greater comfrey, that of dried roſes, quinces, and marmalade prepared from them. Likewiſe the peruvian bark has been recommended, firſt by Morton, and afterwards by a great many others, as a moſt excellent remedy, and not without reaſon. From it the *aſtringent peruvian electuary* of Fuller *, which is in ſuch common uſe, borrows almoſt its intire virtue; although, like other tonics and aſtringents, it ought not to be employed until the veſſels have been ſufficiently emptied, and the violence of the fever, if any be preſent, has been broken. The tincture of catechu alſo, as well

as that of blood-ſtone and red coral, is recommended by not a few. Dickſon † pronounces nitre, given in ſmall and frequently repeated doſes, to be a certain remedy for checking hemoptyſis, and ſometimes other hemorrhages; and although he adminiſters it in conjunction with conſerve of red roſes and ſpermaceti, he thinks that the ſalutary effects are to be intirely aſcribed to the nitre. He conſiders it as being anodyne, refrigerant, and aſſuaging. But, with ſubmiſſion to this author, I have frequently obſerved a cough to be excited by the nitre, than which nothing is more prejudicial in hemoptyſis. Nay, ſometimes after the long-continued employment of it, in conſequence of its acrimony, which is not overcome by the vital powers, it has been obſerved to induce hemoptyſis itſelf.

* The *Electuary of Fuller*.—Rec. Cortic. peruvian. pulv. unc. j. Balſ. tolutan. terræ Japonicæ pulv. an. drach. j. Syr. de ſymph. Boyl. q. s. M. f. Elect. quod in decem part. æquales dividendum eſt, ut binæ vel tres intra diem ſumantur, et ſuperbibatur hauſtus aquæ idoneæ. † Vid Ludwig. *Comment.* vol. xviii. P. III. p. 399.

39. But if the general evacuations, and other remedies employed, do not check the flow of blood, or if the quantity of blood which is diſcharged be ſo great, that it requires being ſtopped as quickly as poſſible, nothing elſe remains for the patient than having immediate recourſe to the drinking of cold water. The greateſt expectations of relief are placed in this remedy, provided ſymptoms of inflammation be not preſent, nor the hemoptyſis combined

with any congeſtion of long ſtanding, or any morbid ſtate of the lungs, in which caſes it is neither ſo ſafe a remedy, nor is its benefit ſo much to be depended upon. In the year 1756 Gervaſi * publiſhed an expreſs diſſertation upon its wonderful efficacy in hemoptyſis and every other hemorrhage. But, before his time, others alſo, and particularly Ghis †, aſcertained its virtues by experiment. We muſt commence with ſimple water at its uſual temperature, and afterwards have recourſe to the coldeſt, or even that which is mixed with ice. Some preſcribe a cupful of it to be drunk off every quarter of an hour. My practice is to give eight or ten ounces every half-hour, allowing no other kind of food; and I adviſe continuing its employment, night and day, for ſome days, ſometimes for a week, or at leaſt until the ſpitting of blood has ceaſed. Afterwards the drinking of it ſhould be gradually diminiſhed, and ſome weak aliment ought to be allowed; on which account Lauſane ‡, Cirilli ‖, and Valliſner §, whoſe names I have elſewhere had occaſion to mention, when ſpeaking of the watery diet in the cure of fevers, may be conſulted. A later writer, De Mertens ¶, in the treatment of this very ſevere complaint, has been ſucceſsful in the employment of cold water, both taken internally, and applied externally by means of linen rags, to the arms and calves of the legs. The ſame author, however, adds, that when it fails he uſed to apply a large bliſter between the ſhoulders; and illuſtrates the efficacy of this remedy, both in

immediately allaying the cough, and in checking the ſpitting of blood, by four examples which he adduces. I myſelf have ſeveral times made trial of this remedy in obſtinate and recurrent hemoptyſis, but not with the ſame ſucceſs with which it was attended in the hands of De Mertens.

* Ignat. Gervaſi *a Monte Faliſco Medici Romani de Uſu Frigidæ in hæmoptyſi, et quocunque Sanguinis profluvio mechanico-phyſica diſſertatio.* Rom. 1756. See alſo Orteſchi, *Giorn. de Med.* vol. i. n. 34. an. 1763. p. 270. and Swieten, § 1200. † *Lettr. Med.* let. 1. p. 11. ‡ *Vero metodo di ſervirſi dell' acqua fredda, &c.* || *De Frigidæ in Febr. Uſu.* in *not.* upon Ettmuller. § *Dell' Uſo ed Abuſo, delle bevande, e bagni freddi, &c.* ¶ *Obſerv. Med.* P. iii. c. 2. Vindob. 1778.

40. When the ſpitting of blood has altogether ceaſed, the remainder of the cure conſiſts almoſt intirely in abſtinence, reſt, and in the employment of a proper diet. Among the remedies employed, milk is ſaid to be highly beneficial, eſpecially aſſes milk, or ſkimmed milk; or, if this be not borne, or become acid, the *ſerum lactis dulce* of Hoffman, which never becomes acid, and uſed to be very frequently preſcribed by its inventor, or the ſoup of frogs, river-crabs, gruel of oats, or the *potus avenaceus*; likewiſe the expreſſed juice of barley, rice, and the like; alſo watery infuſions, not very warm, of betony, cheveril, ſcabioſa, of the flowers of the ſmaller daiſy, and of arnica, are well adapted to reſolve the grumous blood which remains, and to gently ſtrengthen the texture of the lungs, eſpecially with the addition of red roſes. I have read of more than twenty

patients labouring under hemoptyſis having been cured by Clerc * by means of milk taken from a cow which had been fed upon bran and water and nettles.

* *Hiſt. de l'Homm. Malad.* vol. ii. p. 31.

41. But above all change of air is to be enjoined. Likewiſe geſtation and riding are conſidered as being highly beneficial, but ought to be regulated by a ſkilful practitioner; for they do not anſwer every perſon and caſe. *Balſamics*, alſo, eſpecially thoſe of a more acrid nature, are ſeldom admiſſible, whatever others have ſuppoſed, or may ſtill think. With regard to the diet, pottage made of the flour of barley, rice, oats, ſago, Turkiſh or Saracen corn; the intubaceous and ſoft vegetables; calf-feet jelly, and hartſhorn, acidulated with citron-juice, or that of peaches, ſoft boiled freſh eggs; ſummer-fruits, both freſh and preſerved, and the like, are proper to be employed. The patients ought not to uſe animal food, excepting the fleſh of chickens, and young animals, or that of tender freſh-water fiſh; likewiſe wine, and every thing acrid and heating ought to be avoided. Care ought to be taken to keep the bowels open; and blood ſhould be drawn generally every three months, according as the patient's age, temperament, the climate, and other circumſtances may require.

CHAPTER III.

OF PHTHISIS PULMONALIS, BEGINNING WITH AN ACCOUNT OF UNIVERSAL CONSUMPTION, AND ITS VARIETIES.

42. THE term *phthiſis*, which is equivalent to the Latin *tabes*, generally comprehends any lingering decay of the body, without reſpect to its cauſe or origin: I ſay *lingering*, which, it is to be ſeen, is to be readily diſtinguiſhed from an accidental waſting of the body quickly terminating, occaſioned by any acute diſeaſe, or immoderate evacuation, or unuſual abſtinence from food. I have therefore conſidered it as worth while to treat briefly, firſt, of this phthiſis, or conſumption; and, next, of that, in particular, which ſucceeds to a morbid ſtate of the lungs, however induced. For although every waſting of the body does not belong to this ſeat of the cheſt, ſo as to be referable to the diſeaſes of this claſs, ſtill as in both kinds of conſumption the firſt ſymptom which is noticed as common to both is the emaciation; I therefore do not conſider it as foreign to treat of both diſeaſes in this place.

43. Every conſumption, therefore, taken univerſally, may be conſidered in a double light, either as an extenuation of the body, proceeding from the whole habit, or from a morbid ſtate, congeſtion, abſceſs, or ulcer of ſome of the viſcera. That which proceeds from the whole habit, and not from a morbid ſtate of any particu-

lar viſcus, receives the appellation of *atrophia* in Greek, which is generally unaccompanied with fever, hectic heat, or cough, and may ariſe in a threefold way; namely, either from defect of aliment, or from its being of a bad kind, or from a mal-conformation of the parts to be nouriſhed*.

* Beſides this atrophia of the whole body, there is likewiſe another which affects only a particular part. This laſt, if it be ſo great that a limb becomes dry, is likewiſe called *aridura*.

44. The nouriſhment will be deficient if it be not received at all into the ſtomach, or not in the quantity which is requiſite, as when the deglutition is injured, in hunger, and want; or if matter which is not calculated for the nouriſhment of the body be taken, or it cannot penetrate into the blood, on account of the paſſages being ſhut up; as is known to take place in obſtruction or injured action of the pylorus, inteſtines, meſentery,—which is moſt liable to affect children and infants,—cellular membrane, or lymphatic veſſels, or, though it do reach to the blood, if it do not go to the nouriſhment of the body, but waſted in conſequence of ſome immoderate effuſion of the blood itſelf, or ſome other fluid.

45. In conſequence of the exceſſive effuſion of blood and other fluids, the body is waſted in hemorrhages, in ſalivation, in ſuckling, in the too frequent emiſſion of ſemen, both ſpontaneous and artificial, in gonorrhœa, in fluor albus, in an exceſſive diſcharge by the bowels

and kidneys, in exceſſive ſweating, in ulcers being long kept open, in dropſy, eſpecially aſcites, and in effuſions or evacuations of whatever other kind of the excrementitious and uſeleſs fluids; as it cannot but happen that ſome uſeful fluid, with which the body ought to be nouriſhed, muſt be carried off along with them. To this head ought to be referred, the *tabes dorſalis* of the ſecond book (N. 49.) of the writings of Hippocrates *concerning diſeaſes*; for the ſubjects of it are newly-married people, who are affected with it in conſequence of exceſſive venery, and loſs of ſemen; and becauſe the medulla ſpinalis ſeems to be injured by it, the name of *dorſalis* (a *dorſo*) has been beſtowed upon it. The words in which he deſcribes the diſeaſe are as follow: "*Tabes dorſalis* originates from the medulla. It chiefly attacks newly-married and libidinous people. They do not, however, labour under fever, their appetite is good, but they ſtill continue to fall off. And the perſon thus affected, when interrogated, will ſay that he feels a ſenſation as if ants were creeping down from his head to his ſpine; and when he voids his urine, or goes to ſtool, a copious flow of thin ſemen comes off, and the ſeminal fluid does not remain in the uterus, while the patient during ſleep has emiſſions, whether he lies with his wife or not. And when he walks or runs, particularly when aſcending an acclivity, he is ſeized with panting, weakneſs, heavineſs of the head, and *tinnitus aurium*. Such patients, in proceſs of

time, when they are attacked with acute fevers, generally ſink under *lipyriæ*."

46. As I am treating of *tabes dorſalis*, I ſhall not omit to enumerate other ſpecies of the ſame complaint, of which mention is made in the prognoſtics of Hippocrates, or by other medical writers of extenſive experience. And, in the firſt place, I find, that in the book concerning *internal affections* (N. 13. near the end) mention is made of another *tabes dorſalis*, which, as it alſo is ſometimes derived from immoderate venery, it ſeems proper to deſcribe it in the very words employed by the author. "The ſpinal marrow becomes dry principally when the veins going to it have become obſtructed, as well as the communication between it and the brain cut off. On account of the general indiſpoſition of the body, it becomes morbidly affected. It likewiſe becomes dry in conſequence of venery. The patient is diſtreſſed with the following ſymptoms: An acute pain is felt in the head, neck, loins, and in the lumbar and crural muſcles, ſo that he is ſometimes incapable of bending the legs. Coſtiveneſs alſo occurs, together with a difficulty of making water. At the beginning of the diſeaſe he is not ſo much diſtreſſed; but the longer it is protracted, the more violent do all the ſymptoms become: and the patients grow as it were anaſarcous, and ulcers break out in the loins, of which ſome heal up, while others break out afreſh." This ſpecies of tabes ſeems to differ little

from the former (45.). But, in the former, it is probable that the whole nervous ſyſtem becomes languid; while, in the latter (46.), it is alſo irritated, convulſed, and laſtly reſolved. In the former, defect of the uſeful and nutritious fluids, in the latter, vitiation and ſtagnation of them, and conſequent atony of the ſolids, conſtitute the diſtinction between them.

47. Another ſpecies of *tabes dorſalis*, which belongs to this place, is mentioned by Willis (*Pharm. Rat.* P. ii. c. v.). In it a diſcharge, not of blood, but of ichor, or putrid matter, takes place from the genitals; which, when it is extenſive and of long continuance, frequently weakens the powers of the whole ſyſtem, and, by withdrawing the alimentary matter, induces *atrophia*, or *waſting*. This is obſerved to take place chiefly in gonorrhœa and fluor albus, whether theſe effects be produced in conſequence of an impure connection, or exceſſive venery, or a blow, or a bruiſe, or violent effort, or any other injury ſuſtained by the loins.

48. But let us return to the ſubject from which we have been led by the conſideration of *tabes dorſalis*. I have already ſhewn (44. 45.) in how many ways the nouriſhment may be defective. Let us now ſee in what manner it may be vitiated. This may happen either in conſequence of its being imperfectly digeſted, or from its not acquiring the nature of chyle in the inteſtines, and

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JAN 7 1922
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not being properly aſſimilated to the ſound fluids; or becauſe, being carried into the blood, it meets with crude, viſcid, acid, ſalt, acrid, alkaleſcent fluids, or ſuch as otherwiſe deviate from their natural craſis and goodneſs, and is contaminated by them; as not unfrequently happens in many diſeaſes, eſpecially after badly treated and imperfectly reſolved fevers, which ſometimes terminate in hectic fevers.

49. It remains for me to take a view of the morbid condition of parts (43.), in conſequence of which it ſometimes happens that the aliment is neither ſufficiently prepared for nouriſhment, nor properly converted into an animal nature, nor rightly applied to the nouriſhment of the parts, or, if it be applied, not retained as it ought to be. Parts are ſaid to be morbidly affected, when, loſing their tone, they become languid, and, as it were, enervated. Which, as it for the moſt part in a great meaſure chiefly depends upon defect of the nervous fluid, and laxity and inactivity of the nerves, inſomuch that the parts become almoſt reſolved; this ſpecies of phthiſis is therefore named by Morton *atrophia nervoſa*, by which name it is diſtinguiſhed from that which ariſes from the whole habit (45.), which he thought it better to denominate ſimply *atrophia ab inanitione*. But the parts may be not only enervated, as I have already obſerved, but alſo affected in the oppoſite way. For ſometimes all the fibres, particularly the veſſels, and all the cellular

membrane, become ſo much contracted, rigid, and conſolidated, that they can neither be penetrated, nor moiſtened, nor extended, nor nouriſhed by the alimentary juice. In which caſe the body will become ſapleſs and waſted. This is chiefly liable to happen in men of a dry temperament and warm conſtitution. But when old men become emaciated from this cauſe, which very frequently happens, it would properly be named *tabes ſenilis*; although that name is generally applied to the waſting in old age which ſucceeds to a catarrhal cough of long ſtanding, and copious expectoration; while others are of opinion that this would be better named *phthiſis pulmonaris pituitoſa*.

50. To the *atrophia nervoſa* (49.) is generally referred the *tabes tertia*, which is explained in the third book of Hippocrates, *De Internis Affectionibus*, (N. 13. near the end), aſcribed by Haller to his followers. But many more, with Willis, affirm that it is a ſpecies of *tabes dorſalis*; with what juſtice, however, I have not been able to determine. For in the whole peruſal of its deſcription nothing occurs which indicates that the ſpinal marrow, back, or column of the vertebræ, are affected. But becauſe, forſooth, that ancient writer, whoever he be,—certainly not always very ſucceſsful in aſſigning the cauſes or ſeats of diſeaſes,—is of opinion that in that conſumption the ſpinal marrow is oppreſſed with blood, are we at once blindly to

follow his opinion? But it may be ſaid, Marinel in his Commentaries remarks that this opinion is confirmed and more clearly explained by Hippocrates, in his book *De Locis in Homine* (N. 18.), in the following words: "When an influx to the medulla takes place, a ſecret conſumption ariſes." From which paſſage nothing elſe is collected, than that Hippocrates believed that tabes ſometimes takes place from an influx to the *medulla ſpinalis*, which in other parts he has obſerved more unequivocally, but that he did not intend to confirm what has been written in the book *De Internis Affectionibus*, already quoted; as it is perfectly well known, that Hippocrates is neither the author of that book, nor is any mention made there of a ſpecies of conſumption which may be named *occulta* and *inconſpicua*. For in that paſſage the words are thoſe of an anonymous author, concerning a particular conſumption, in which the patient immediately becomes black and ſwelled, and the parts under the eyes are of a pale colour, while the veſſels all over the body are partly pale and diſtended, partly red and manifeſt. The patient ſpits up whitiſh matter, and with ſuch difficulty that he ſometimes feels as if he were ſuffocated; nay, during the effort of coughing he throws up a quantity of bile, ſometimes phlegm, and frequently the food which he has taken in; nor is he relieved unleſs after another vomiting, and only for a very ſhort time, as he quickly relapſes into his former diſtreſſing

ſituation. His voice is likewiſe more ſhrill than in health, he is affected with " fever, rigors, and ſweats, and continues thus to languiſh for nine years, few recovering from this complaint." But whatever be the nature of this affection, can it be named *occulta* and *inconſpicua?* Are not the lungs alſo manifeſtly affected in it?

51. Nor, in my opinion, does Marinel make for his point, when he endeavours, from the ſame book (*De Locis in Homine*, N. 29.), to ſhew that Hippocrates in fact there meant the *tabes dorſalis*, becauſe he has written, " that the patient's loins, and the anterior parts of the body, became pained, and felt as if they were empty." For theſe ſymptoms may be reckoned to be general marks of conſumption; nor do they ſufficiently point out *tabes dorſalis*, far leſs that ſpecies of the complaint mentioned by the author of the book *De Internis Affectionibus* (50.): unleſs we chuſe to name every ſpecies of tabes ariſing from the ſyſtem in general *dorſalis*; which I ſhould conſider as being altogether abſurd. Nor can I aſſent to the opinion of Raulin *, who conſiders the *tabes nervoſæ* as being altogether the ſame with the *tabes dorſales*; probably becauſe, from the paſſages of the ancient writers, which are found to be exceedingly obſcure and complicated, he could diſcover nothing certain on the ſubject; unleſs we wiſh to confound ſpecies with genera.

* *Obſ. de Med.* P. I. *Remarq. ſur le Phthiſ. en general.* p. 2.

52. We may with more reaſon refer to the *tabes dorſalis* another ſpecies of the complaint, mentioned by Willis *(loc. cit.)*, very different from that which he has adduced from the book *De Internis Affectionibus* (50.), and to be diſtinguiſhed from the other ſpecies already deſcribed (45. 46. 47.). For he has ſeen ſome patients exceedingly diſtreſſed with a pain in the loins, nay, ſometimes all over the back, who, after remaining for ſome time diſtreſſed in this manner, have become hunch-backed or lame, and have at length experienced an univerſal waſting, excepting in the head, as happens in the caſe of rickets. He is of opinion that a particular morbid humour, or matter, deſcending along with the nervous fluid through the ſpinal marrow, flows into the origins or trunks of the vertebral nerves, and, irritating the fibres, firſt creates a conſtant pain, and afterwards, in conſequence of ſome of them being compreſſed or intimately deranged, the correſponding muſcular fibres are reſolved, while the antagoniſt muſcles, becoming more ſtrongly contracted, move the vertebræ, to which they are affixed, from their place, ſtretch and diſtort them, and, laſtly, the nerves and muſcular fibres being either paralyſed or debilitated, the patients not only become lame, but likewiſe their limbs and whole body grow languid and ſapleſs; which would not happen if the ligaments alone became relaxed by a morbid fluid. Nor muſt this complaint be ſuppoſed to attack children and young people

only, but likewiſe ſuch as are advanced in life. For I myſelf have ſeen ſeveral adults affected with this complaint, whoſe vertebræ had become ſwelled, had fallen from their place, and become carious. I am therefore diſpoſed to believe, that not only the nervous fluid, but likewiſe that of the bones, and the ſynovia and lymph, deſtined for the nouriſhment of the ligaments, in this diſeaſe are ſometimes altered and corrupted.

53. But the tabes or conſumptions proceeding from the whole ſyſtem being affected (43.), or thoſe which belong to the *atrophiæ nervoſæ* (49.), do not end here. For there are likewiſe ſome other ſpecies which proceed from *grief*, *noſtalgia*, *love*, and other affections of the mind; from *hypochondriaſis*, *hyſteria*, *ſcurvy*, *lues venerea*, and *arthritis*; concerning which, as being in a great meaſure ſecondary, the limited plan of my work prevents me from ſpeaking particularly. But they may be almoſt all referred either to diminution of the nervous influence, or to dryneſs of all the fibres, or to a morbid ſtate or undue diſtribution of the fluids. A very clear example of atrophia proceeding from the whole habit has been given by Deliſle *, which is not of unfrequent occurrence in practice. In it the whole body waſtes, although neither cough, fever, nor any difficulty of breathing be preſent. Thoſe who fall into this conſumption have a great averſion to food, never feel hunger, complain of great weakneſs of their

thighs and legs, and, their emaciation increaſing daily, they pine away. Their belly is ſo much bound that they are obliged to keep it open by means of injections. Their tongue is covered with a clammy, thick mucus, or it is frequently parched. They are diſtreſſed with a perpetual burning within, which they can by no means allay. Their urine is ſometimes red, ſometimes pale, ſometimes very ſcanty, and of a very deep colour. The region of the ſtomach, although it be neither tenſe nor ſwelled, when preſſed is affected with a very acute pain. The abdominal muſcles are frequently exceedingly tenſe. They are diſtreſſed with the moſt obſtinate watching night and day; nor are they refreſhed by their ſleep. Their face is pale and livid, and ſometimes disfigured with puſtules. Their eyes are generally bleared, and the eye-lids for the moſt part glued together with matter. Their ſkin dry and obſtructed. Their pulſe is fine, and ſomewhat hard. All of which ſymptoms ſeem to indicate a ſcanty ſecretion of bile, and that a viſcid, foul, and acrid collection of it takes place about the præcordia; that the blood abounds with acrimonies, is deprived of its bland and nutritious fluid; and that their whole ſolids are dry and ſapleſs. Deliſle has obſerved that thoſe perſons are moſt liable to this complaint who indulge to exceſs in heating, acrid, aromatic articles of diet, and in the drinking of wine and fermented liquors. Patients labouring under it, by having recourſe

to timely medical advice, are frequently reſtored to their former health.

* *Traite de la Phthiſ. Pulmon.* c. xiv. p. 156. 164.

54. Hitherto I have confined my obſervations to the conſumption which ariſes from an affection of the whole ſyſtem. It remains for me to enumerate the other ſpecies of the complaint occaſioned by the morbid ſtate of a particular part, as by tumours, abſceſſes, and ulcers. But nothing is of more frequent occurrence than for a taint of the viſcera, as the obſtruction, ſcirrhus, ſuppuration, or ulceration, of the liver, ſtomach, kidneys, ſpleen, pancreas, meſentery, inteſtines, uterus, or bladder, to give riſe to *phthiſis hepatica*, *ſtomachalis*, *renalis*, *ſplenica*, *pancreatica*, *meſenterica*, *inteſtinalis*, *uterina*, *ſyſtica*, and ſo forth. For theſe viſcera, when affected with any morbid taint, and rendered incapable of performing their functions, either do not elaborate the nutritious juice properly, or impart ichor, pus, or ſanies, or ſome putrid taint to the whole maſs of blood, in conſequence of which it becomes incapable of nouriſhing the body, or diſcharge their ſound and uſeful fluids, thus gradually depriving the body of its due quantity of fluid, and occaſioning its emaciation and decay; particularly

PHTHISIS PULMONALIS.

The lungs are liable to ſuch a vitiated ſtate, and contain the moſt frequent cauſe of conſumption. Therefore the ſpecies of conſumption which exhauſts the body from ſuch a cauſe is pro-

perly termed *phthiſis pulmonalis*, that it may be diſtinguiſhed from the others; nay, ſo well is it known, even among the common people, that the ſimple term *conſumption* is frequently employed to denote that ſpecies the cauſe of which is contained in the lungs. But the real *phthiſis pulmonalis*, according to the common opinion *, is that ſlow conſumption of the whole body which ſucceeds to an ulcer of the lungs, and the conſtant fever depending upon it. But when the body is waſted in conſequence of any other affection or taint of the lungs, as when they labour under very great *atony*, *flaccidity*, *waſting* †, *tubercles* ‡, *ſtrumæ*, *ſcirrhus*, *congeſtions*, *calculi*, and other ſtony concretions, *vomicæ*, or *empyema* of the cheſt, and ſimilar morbid ſtates, in ſuch caſes alſo I am diſpoſed, after Fracaſtor ‖ and Willis §, to believe that phthiſis pulmonalis is preſent, not the genuine and exquiſite ſpecies of the complaint which I have already defined, but one which is in ſome meaſure *ſpurious* and *imperfect*. For although in it actual ulceration of the lungs be abſent, ſtill the effects and ſymptoms agree ſo much with thoſe of real conſumption, as to have the greateſt reſemblance to it, or at leaſt, as Juncker alſo allows ¶, to render the tranſition to it exceedingly eaſy.

* Galen, *Defin. Med.* n. 260. 261. Aretæus, l. c. I. 8. p. 62. Aetius, *Tetrab.* ii. *ſerm.* 4. c. 67. Fernel. *Pathol.* l. v. c. x. p. 109. Car. Piſo, *De Cogn. et Cur. Morb.* l. ii. c. x. Boerh. § 1196. Van Swiet. *ib. in Comment.* Morton *phthiſiol.* l. ii. *De phthiſ. pulmon.* p. 26. Dupre' de Liſle, *De la phthiſ. pulmon.* c. i. p. 5. &c.

† So great is the relaxation or atony of the lungs ſometimes, that not only does a great quantity of fluids flow to them, and exſude through the exhalants, interſtices of the fibres, and inviſible pores of the veſſels, and exhauſt almoſt the whole body by the quantity and frequency of the expectoration, but likewiſe the lungs ſecrete pus itſelf from the whole blood, on account of a particular diatheſis of it, or generate the pus, aud pour it out, without any ulceration. Inſtances of the lungs having been diſcovered intire in the bodies of patients who had long brought up a copious purulent expectoration, and had been conſidered as labouring under ulcerated lungs, may be found in the works of Bennet (*Theatr. tab.* p. 96.), of Morgagni (*De ſed. et cauſſ.* epiſt. 22. n. 28.), of Lieutaud (*Hiſt. anat. med.* l. ii. obſ. 404.), of De Haen (*Rat. med.* P. xii. c. vi. p. 250. and in various other parts), of Caſſimir Medicus (*Collect. obſ. med. pract.* vol. i. p. 279. 230. & *Com. Lipſ.* ſuppl. 2. to dec. 2. p. 214.), and other authors.

‡ Tubercles take place not only in the aſpera arteria, in the bronchia, and lungs themſelves, in conſequence of the mucous follicles, cells, veſicles, or veſſels, eſpecially the lymphatics, being obſtructed, but likewiſe grow externally upon the bronchia, eſpecially when the conglobate glands, which, on account of being every where in the vicinity of the bronchia, are generally named *bronchial*, become morbidly affected, or indurated, or become filled with rough ſand, or other cartilaginous, bony, or ſtrong concretions, or turgid with an abſceſs; for which reaſon they are conſidered by Haller and others as being not an unfrequent cauſe of the moſt lingering phthiſis. It is ſtill a matter of diſpute whether theſe glands only communicate with the lymphatic ſyſtem, or pour any thing into the bronchia themſelves. Morgagni and Fantoni deny that they do ſo; while Senac, Bergen, and Haller hold the oppoſite opinion. Be this as it may, it is a certain fact, at leaſt in a morbid ſtate, that when compreſſed they pour out the bluiſh or blackiſh humour with which they abound into the cavity of the bronchia, and mingle it with the mucus of the lungs. Nay, it is ſometimes alſo obſerved in the expectoration of people in good health. Theſe bronchial glands, therefore, when in a ſtate of ſuppuration, will ſometimes diſcharge purulent matter. See Haller, *Elem. phyſ.* l. viii. ſect. 2. § xv.

‖ *De morb. contag.* l. ii. c. 9. where the following words occur: "We may likewiſe with ſufficient propriety name that ſpecies *phthiſis*

which affects the lungs with corrupted and putrid phlegm, in such a manner that, if they be not ulcerated, they are rendered flaccid and putrid; for, on dissecting some bodies, I have observed sometimes part of the lungs sound, and in no respect vitiated, part not exactly putrid, or ulcerated, but flaccid and soft, and tending to waste; sometimes I have observed the whole lungs in this condition. When, therefore, such a wasting spreads to the lungs, we may with reason pronounce a person to be phthisical.

§ Willis, P. ii. sect. 1. c. 6. where phthisis is defined to be *a wasting of the whole body, arising from a mal-conformation of the lungs.*

¶ *Med. conspect. tab.* 34.

55. Both the genuine and spurious complaint (54.) ought to be distinguished into primary and secondary, according as it originates from the lungs being primarily affected, without being preceded by any other disease, or as it succeeds to another disease, as scurvy; lues venerea, gout, hypochondriasis, or hysteria, scrofula, small-pox, measles, itch, herpes, scirrhus, cancer, and the like, in consequence of which it receives a particular name, being denominated *scorbutic*, *venereal*, *arthritic*, *hypochondriacal*, *hysterical*, *strumous*, or *scrofulous*, and so forth. To these De Haën adds, as having been seen by himself, the *phthisis cellularis*, *femoralis*, *coxaria*, or *ischiatica*, and others of a similar kind. Morton, again (*Phthiosiolog.* l. 2.), chose to name that which we have called primary, *originaria*, *secondary*, or *symptomatic*. But it appears to me, as I have elsewhere mentioned, that a distinction may sometimes exist between the *secondary* and *symptomatic* complaint. For the *secondary* species may continue to exist although the disease, for instance hemoptysis, pleu-

riſy, &c. from which it originated, may have intirely ceaſed; which is by no means the caſe with the *ſymptomatic* ſpecies, as the venereal, ſcorbutic, &c. ſince it cannot be a ſymptom of a diſeaſe which has diſappeared, if in fact we are to conſider a ſymptom as being the effect of a preſent cauſe, and not of a paſt one. Beſides, there is no decline, whether ariſing from the whole habit, or from a taint of any part or viſcus, which may not terminate in *ſecondary* or *ſymptomatic* phthiſis pulmonalis. For the blood either degenerating in conſequence of deficiency of proper aliment, or being infected with foreign or hurtful humours, whilſt it paſſes through the delicate ſubſtance of the lungs, without being properly elaborated, on account of the relaxation of the parts, eaſily ſticks there, and depoſiting its crude, acrid, and corroding liquors, which penetrate more deeply into the ſubſtance of the lungs, induces ſpaſms, congeſtions, and tubercles, which firſt give riſe to cough, difficulty of breathing, pain of the cheſt, hemoptyſis, or inflammation, and, laſtly, to ſuppuration, purulent ſpitting, ulceration, and genuine and confirmed phthiſis pulmonalis. Moreover, according as it runs its courſe more or leſs rapidly, it is likewiſe called *acute* or *chronic*. For ſome phthiſical patients are cut off in a very ſhort period, while others, contrary to all expectation, drag out a very lingering exiſtence.

56. Since, therefore, phthiſis pulmonalis is not

always of the ſame degree of ſeverity, and generally attains its height in a gradual manner, it is divided by ſome authors into three degrees. They ſay that the *firſt* is preſent when the lungs begin to be affected with congeſtion, are obſtructed, and a kind of hectic heat is felt in them. That the *ſecond* is preſent when they are covered with tubercles, which gradually proceed from an accumulation of coagulated lymph, or other crude matter. But on theſe tubercles becoming inflamed, and ſuppuration taking place, being converted into abſceſſes and ulcers, which ſometimes diſcharge pus and blood, then the *third* degree is ſaid to have commenced. But this diviſion does not ſeem to be applicable to every ſpecies of phthiſis pulmonalis, as every ſpecies does not uniformly ariſe from tubercles, although this happens moſt frequently; and conſequently every phthiſis pulmonalis does not obſerve the ſame manner of commencing and proceeding in its courſe. For thoſe which proceed from hemoptyſis alone, from pleuriſy or peripneumony having undergone ſuppuration, or from an acrid and corroding humour, and ſimilar cauſes, can by no means be accommodated to this diviſion. Since, therefore, the variety of the cauſes occaſions conſiderable difference in the nature of the complaint, in my opinion it is better divided into *incipient* and *confirmed*. To the incipient may be referred, the *ſpurious* and *imperfect* ſpecies, together with the *tubercular* and *ſcirrhous* (54.); to the confirmed, the *genuine*, and

exquiſite, or *ulcerous*. But as the confirmed or ulcerous complaint likewiſe gradually goes through its ſtages, until it arrives at its fatal termination, in order to exhibit its various ſtates in a clear point of view, it is with better reaſon divided into three degrees, indicated by the difference of the ulceration and emaciation. The *firſt* is ſaid to be preſent when the lungs begin to be in ſome meaſure ulcerated, and the extenuation of the body is not very obvious. The *ſecond*, when the ulceration and emaciation appear more evidently. And, laſtly, the *third*, when the pus is diffuſed over the whole ſyſtem, and the ulcer ſpreads wider, inſomuch that all the fluids being as it were melted, the bones appear only covered with the ſkin *.

* Dupre' de Liſle, *De la phthiſ. pulm.* p. 11. 285. et ſeq.

57. But every ulcer of the lungs does not immediately give riſe to genuine phthiſis, unleſs it occaſions emaciation and a ſlow fever (54.); for it is by no means a rare occurrence, as almoſt all phyſicians know, for ſome patients to cough up matter from the lungs, which is ſometimes yellow, ſometimes viſcid and glutinous, ſometimes purulent, and even ſtreaked with blood, who neither exhibit any very remarkable emaciation, nor labour under a conſtant ſlow fever, or any other great inconvenience, until after a great length of time, ſo that they appear to lead a tolerably ſecure life. It is probable, however, that in the lungs of ſuch perſons there is an ulcer of ſome kind, but covered with a *callus* or *gluten*, in ſuch a

manner that it can neither ſpread wider, nor does it occaſion great loſs of nouriſhment, or impart any pus to the blood. It is probable that ſuch an ulcer is borne like an iſſue or cautery. I have ſeen it protracted in ſome patients for forty years, nay, to old age itſelf. And although I thought that I had diſcovered ſomething of a phthiſical habit in them, ſtill they were ſufficiently capable of attending to the affairs of life. There is a great reſemblance between ſuch patients and thoſe who are carried off very gradually by *chronic phthiſis*. But theſe laſt, although very gradually, nevertheleſs decline daily, and are not free from a ſlow fever. Some authors alſo imagine * that *ulcers of the larynx*, and of the *aſpera arteria*, becauſe they are not ſeated in the lungs, ought to be excluded from phthiſis. But the body is frequently reduced by them alſo, and a ſlow fever occaſioned, by which all the nutritious matter is conſumed. For the lungs are generally affected at the ſame time, or the taint is ſhortly propagated to them. I am of opinion, therefore, that this phthiſis, if not *pulmonary*, at any rate may be named *trachealis*.

* Morgagn. *Epiſt. anat. med.* xxii. n. 27.

58. Enough concerning the varieties of the complaint. It is neceſſary, in the next place, to inveſtigate the cauſes of a diſeaſe ſo very difficult of cure, and of ſuch frequent occurrence. Its proximate cauſe, if I miſtake not, is comprehended by whatever obſtructs, diſtends, relaxes,

irritates, corrodes, inflames, or lacerates the lungs and the neighbouring parts, in conſequence of which a purulent ulcer at length ariſes. But this does not readily happen, unleſs the prediſpoſing and exciting cauſes concur with it. Of the prediſpoſing cauſes the chief are, the period of life between eighteen and thirty-five *; a delicate organization of the lungs and whole body; a malconformation of the cheſt; the ſanguine and choleric temperament; plethora; a bad ſtate of the fluids, ariſing from various cauſes; various acrimonies of the fluids; and an hereditary taint. The exciting cauſes are; violent emotions of mind; exceſſive ſtudy, eſpecially by night; long continued watching; bad living; too great indolence or activity; premature venery; a thick, damp, marſhy ſituation, expoſed to ſudden viciſſitudes of weather, or too rarified, light, and elevated an atmoſphere †; a dry ſummer, with the north-wind prevailing, ſucceeded by a rainy autumn, and a continuation of the ſouth-wind ‡; cold ſuddenly ſucceeding to heat; blows, contuſions, and wounds; extraneous bodies falling or inhaled into the aſpera arteria; great ſtraining of the voice; violent efforts; keeping in the breath long; poiſons; the noxious effluvia of coals ‖; thoſe ariſing from metals and acids, as the nitrous and vitriolic §; a cough, defluxion, catarrh, and very frequently the omitting of bleeding in theſe laſt; hemoptyſis; pleuriſy or perip-

neumony being imperfectly reſolved ¶, or terminating in ſuppuration; ſcurvy; ſcrofula; lues venerea; hypochondriaſis and hyſteria; morbid tranſlations; the ſuppreſſion of uſual evacuations **; herpes, ſmall-pox, meaſles, and other cuticular complaints being forced in; and, laſtly, contagion, if we abide by the common opinion ††.

* Hippocr. aph. 9. ſect. 5. & aph. 7. ſect. 8. † Rozier de la Chaſſagne, *Manuel des pulmoniq.* p. 282. 283. ‡ Hippocr. aph. 13. ſect. 3. & aph. 22. ſect. 3. || Rozier de la Chaſſagne, *Manuel des pulmoniq.* p. 281. Van Helmont, *Oper.* p. 200. § Hippocr. aph. 12. ſect. 6. ¶ *Idem*, aph. 15. ſect. 7. & *Coac.* n. 438. ** *Id.*, aph. 15. ſect. 5.

†† Morgagni (*Epiſt. anat. med.* xxii.) declares himſelf in favour of thoſe who conſider phthiſis as contagious. Van Swieten confirms the ſame opinion by adducing inſtances of it. Antonio Cocchi, however, and lately Caſtellani, Profeſſor of the Practice at Mantua, have endeavoured to ſupport the oppoſite opinion. In Tuſcany, however, notwithſtanding that the College of Phyſicians have pronounced phthiſis to be free of contagion, it has been ordained by law, that the apartments, cloaths, and other things which have been uſed by conſumptive patients, ſhall be purified, the old partitions being taken down, and new ones erected in their ſtead, and every thing elſe committed to the flames.

THE DIAGNOSIS.

59. BUT as phthiſis, when once preſent, can ſcarcely be removed, it is of the utmoſt conſequence to foreſee and prevent it before it commences its attack. Its future appearance may be apprehended from the patient's being born of phthiſical parents; from his having a narrow, flat cheſt; high ſhoulders; a long ſmall neck; from

his being of tall ſtature; from his having a weak or hollow voice; a fine ſkin; from his being of a fair complexion, and having a beautiful roſy complexion; from his being of a ſlender habit; from premature acuteneſs of judgment; from his being hunch-backed, and expectorating a great quantity of phlegm, eſpecially in the morning; from his being frequently ſubject to catarrhal affections; and, laſtly, from preceding diſeaſes *. That the complaint has begun, is generally indicated chiefly by three ſymptoms: namely, a conſtant cough; hectic fever, which is aggravated after meals, and ſometimes intermits in the morning; and waſting of the muſcular parts. The cough at the beginning is frequently mild indeed, ſometimes dry, ſometimes moiſt, and like a catarrhal one, and afterwards becoming more troubleſome, eſpecially after meals, inſomuch that it not unfrequently is followed by vomiting of the food, whether this be derived from the œſophagus being irritated at the ſame time, or from the ſtomach being compreſſed, in conſequence of the violent contraction of the diaphragm and abdomen. Morton is of opinion that this particular ſymptom diſtinguiſhes the phthiſical from the catarrhal cough; and ſtill more certainly if to it be added loathing of food; thirſt; a viſcid, thick expectoration of various colours, ſometimes ſtreaked with blood, and of a ſalt, or ſweet, or bitter, or any other foreign

taſte; a ſenſe of weight in the cheſt, eſpecially where the injury is ſeated; unuſual oppreſſion; difficulty of lying on either ſide, exciting cough; ſometimes a dull pain in a particular part; the reſpiration ſomewhat laborious, eſpecially after walking quick, or mounting ſtairs; ſlight ſweats, at night or in the morning; raiſed and tenſe hypochondres, oppreſſed with a ſenſe of weight; and, laſtly, haſtineſs of temper, or a tendency to lowneſs of ſpirits. The fever at firſt is attended with ſcarcely any quickneſs of pulſe, afterwards increaſes gradually, without exceeding the form of a *ſlow* or *hectic* fever. It is accompanied with very manifeſt heat externally, particularly in the palms of the hands and ſoles of the feet, with watching, and occaſional fluſhing of the cheeks. In the mean time the urine is ſcanty, and deep-coloured, and readily becomes turbid. The emaciation at the beginning of the diſeaſe is generally ſlight, and goes on ſlowly, and ſcarce perceptibly. But when the fever increaſes, when the appetite is loſt, the digeſtion vitiated, as well as the juice with which the body ought to be nouriſhed; then the patient falls off moſt rapidly, being ſhortly brought down to a mere ſkeleton.

* Hippocr. aph. 15. ſect. 5. & *Coac.* n. 17. 438. 444. 469.

60. Whenever it lays aſide the appearance of a ſlow fever (59.), and, becoming more acute, reſembles a pleuritic or peripneumonic one, or has acceſſions like thoſe of intermitting fevers, but vague and anomalous,—which is a ſymptom pe-

culiar to ſuppuration,—and real pus begins to be ſpit up; there is then no doubt that confirmed conſumption is preſent. For in a ſhort time the greateſt degree of colliquation ariſes over the whole body, both in conſequence of the violent motion of the fever, and from pus being abſorbed into the veins. Hence the ſweats, eſpecially thoſe occurring at night and in the morning, are aggravated, and become almoſt conſtant, frequently alternating with a diarrhœa; the urine is diſcharged in greater quantity, and frequently exhibits melted fat floating on its ſurface. On which account a very rapid loſs of ſtrength, and the moſt extreme degree of emaciation, ſucceed. With regard to the ſpitting of blood, as I have already obſerved (54.), it has not unfrequently happened that, after a long-continued purulent expectoration accompanying a troubleſome cough, the lungs, on being opened, have exhibited no appearance of ulceration. Which is confirmed by Caſſimir Medicus (*Obſ. Med.* vol. i. p. 279. to 320.), who, upon diſſecting dead bodies after purulent expectoration, very ſeldom found the lungs ulcerated, but frequently indurated; ſometimes without any taint, although the patients had daily coughed up a great quantity of pus; while, on the contrary, he diſcovered a collection of liquid pus in the abdominal cavity. It is neceſſary, however, to guard againſt ſetting down that for pus which is by no means ſo; nor muſt

the lungs be diſſected negligently, for they frequently abound with ſmall ulcers and abſceſſes ſcattered here and there over their ſurface, and ſcarcely obſervable, from whence a diſcharge of pus might have taken place, notwithſtanding that the ſubſtance of the lungs afterwards might appear to be ſound. But this is an error into which ſkilful and experienced practitioners are in no danger of falling.

61. Moreover, as the diſeaſe is haſtening to its fatal termination, aphthæ break out in the mouth, palate, and fauces, occaſioning pain and heat when the patient attempts to wallow; the voice becomes hoarſe, nay, is ſometimes intirely loſt; a fetid ſmell proceeds not only from the mouth, but from the whole body; ſometimes puſtules are formed upon the metacarpi; the hair falls out; the nails become adunque; the temples collapſe; the eyes become hollow, the noſtrils thin; the feet and hands ſwell; the bones are covered almoſt only with the ſkin; the expectoration ſtops; the diſcourſe becomes incoherent (*Coac.* n. 437. Hipp. aph. 17. ſect. 7.); the cough ceaſes; but the greateſt difficulty of breathing and anxiety are preſent; the pulſe is languid and weak, intermits, and at length ceaſes; and then death, while the patient ſtill entertains ſome hopes,—for in no diſeaſe are the patients more buoyed up with falſe hopes,—gradually comes on, and puts a period to his ſufferings. But death moſt frequently occurs unexpectedly, either while the patient is

ſhifting his ſituation in bed, or when a ſudden change of weather takes place to hot or cold, as if it came on by ſtealth. The lungs of ſuch patients are generally found conſumed, corroded, and excavated, with large hollows in them. Sometimes alſo an affuſion of pus into the cavity of the thorax, corroding and corrupting all the parts, is found. It at times happens that the phthiſical patient is attacked with a moſt acute pain of the ſide affected, which yields to no remedy. I have more than once diſcovered on diſſection, that this takes place in conſequence of pus penetrating into the pleura, and corroding it, and vellicating the nerves which come from above, together with the neighbouring muſcles.

62. But the nature of the *phthiſis trachealis* is different. This complaint, conſiſting of ulcers of the larynx and trachea (57.), is preceded by a long-continued diſcharge of acrid or ſalt humour; by an herpetic or ſcorbutic taint; by a ſpitting of blood conjoined with other ſymptoms (23.); and by a ſlight cough and titillation, chiefly affecting the larynx. But the ſame cough and titillation accompany the pain or heat at the top of the aſpera arteria; a ſpitting of ſaliva, which is ſcanty, frothy, not concocted, and ſometimes mixed with purulent and white ſtreaks, and ſometimes with ſtreaks of blood, ſometimes truly purulent and ſanious, ſometimes inodorous, ſometimes ſlightly fetid, but having the peculiar ſmell of

pus; hoarſeneſs; aphonia; and ſome extenuation of the body, particularly of the hands and fingers. Beſides, there are preſent ſymptoms of the future appearance of phthiſis (59.); but the following ſymptoms are abſent, namely, the oppreſſion of the cheſt; the difficulty of lying down; the difficulty of breathing is not felt, even when mounting a pair of ſtairs; deep-ſeated cough; and conſtant fever, or, if there be any preſent, it is ſo inconſiderable that it ſometimes appears to be intirely wanting. Linctuſſes and troches kept in the mouth, and ſwallowed gradually, are very efficacious in allaying the heat, prickling, and cough. At length, when the complaint advances, the bronchia, and likewiſe the lungs, become ulcerated, and it terminates in actual phthiſis pulmonalis.

63. Moreover, the ſpecies of phthiſis which is occaſioned by *ſcirrhus*, *crude tubercles*, and *indurations* of the lungs, has ſome marks peculiar to it, by which it may be diſtinguiſhed from the others. It is generally attended with a dry cough, which is very troubleſome, and alleviated neither by oily, nor pectoral, nor paregoric remedies. If any thing during the progreſs of the diſeaſe be coughed up, it is ſcanty, frothy, and very like water in which ſoap has been diſſolved, and generally continues ſo even to the end of the diſeaſe; unleſs, as not unfrequently happens, the cough be ſucceeded by hemoptyſis, in which a bloody expectoration afterwards ſupervenes, mixed

with crude, lymphatic matter. Beſides, thoſe who labour under this ſpecies of phthiſis not only make ſhort and frequent inſpirations, but are likewiſe obliged to draw their breath by inclining their breaſt forwards, and are ſenſible of a frequent pricking ſenſation in different parts of the cheſt; while the fever is generally neither violent nor conſtant. Frequently the glands of the neck or axillæ, and thoſe of other parts, ſwell and aſſume a ſcrofulous appearance. From which we may conjecture, that ſimilar effects take place in the lungs. Let theſe marks be underſtood of ſcirrhous, ſtrumous, and indurated lungs. Beſides, there is a tubercle of the lungs, of which authors make mention, not, as in the former caſe, affecting the whole lungs, but only ſome part, and which is capable of ſuppuration. According to Baglivi (*Prax. Med.* l. 2. c. 8.), thoſe who are affected with this diſeaſe, "though in other reſpects well, begin to breathe with difficulty; the difficulty of breathing is gradually increaſed; their reſpiration is not ſtertorous, and they do not expectorate any thing; they likewiſe feel a conſtant pain in the cheſt, and cannot lie upon the part affected; they are troubled with a dry cough: at length the cheeks grow red; a ſlight fever comes on; and, as ſuppuration approaches, other ſymptoms of it ſupervene. But two pathognomonic ſymptoms of the tubercle being ſtill crude and incipient are, a dry cough and ſlight pain on one or other ſide of the cheſt, agreeably to the remark

of Hippocrates: *So long as the tubercle remains ſtill crude, it occaſions a ſlight pain and dry cough.*" (L. 1. *De Morb.*).

64. Although it has already been ſhewn, that both in incipient and confirmed phthiſis the reſpiration is injured, and the breaſt more or leſs affected in ſome part with pain; this does not hold ſo univerſally but that ſometimes both ſymptoms are abſent. This frequently happens in that ſpecies of phthiſis which has been occaſioned merely by hemoptyſis, without any other morbid ſtate of the lungs. In addition to the cough, ſpitting of blood, fever, and emaciation, the patient ſcarcely ever complains of pain or dyſpnœa. Nay, the patients for the moſt part, becauſe they ſeem to themſelves to breathe well, and have no pain any where, nor lie down with difficulty, will ſcarce allow themſelves to be perſuaded that there is in fact an ulcer in their lungs. Nor is it an uncommon thing for the pain to be wanting in the other ſpecies of phthiſis alſo; for after death great part of the lungs has been found corrupted, corroded, or in a ſtate of ſuppuration, without the patient's having experienced any pain. This ſeems to be owing to the ſlow corruption of the lungs, or to their ſenſibility being diminiſhed or altogether loſt, on account of ſome peculiar morbid ſtate. An ulcerated ſtate of the lungs, therefore, is not incompatible with the abſence of pain. By what ſigns the phthiſis *pituitoſa* may be diſtinguiſhed from the other ſpecies of the

complaint, will readily appear from the marks which have already been enumerated (49.).

THE PROGNOSIS.

65. If there be any hopes of a cure in phthiſis pulmonalis, they ſeem to have place only in the incipient ſtage; for the confirmed ſpecies ſcarcely ever admits of a cure. For the ulcer is conſtantly expoſed to the action of the air; is ſituate in a part from which the pus cannot be eaſily brought off, which is always thrown into commotion, and never at reſt, and frequently violently ſhaken by the cough itſelf; and abounding with tumours it ſcarcely can ever heal up. If, however, it be recent; if the pus be readily diſcharged, white, ſmooth, equal, and not fetid; if no fever, or only a ſlight one, accompany it; if the cough do not prove very diſtreſſing; if the appetite be good, accompanied with a good, or moderately good habit of body, and full cheſt; and ſymptoms of phthiſical colliquation do not ſtill appear; we may then in ſome meaſure expect a favourable termination, particularly when the ulcer has been occaſioned by pleuriſy or peripneumony undergoing ſuppuration (*Coac.* 402.). For phyſicians have more than once obſerved ſpecies of phthiſis ariſing from this cauſe terminate favourably. When the oppoſite of theſe ſymptoms occur, a contrary prognoſis is formed. On the whole, the *hereditary* phthiſis, or that occaſioned by a mal-conformation of the cheſt, or which is

communicated by contagion, generally defies the power of medicine. However, it may be ſometimes avoided if timely aſſiſtance be called in. That which ariſes from the whole habit of body (43. 53.) is more eaſily cured than that which is named *originaria*, or *primary* (55.). Likewiſe the *original* phthiſis is more dangerous than the *ſymptomatic* (55.); as alſo that one is attended with more danger which arrives ſooneſt at the ſtate of colliquation (60.). The ſpecies which ſupervenes upon *hemoptyſis*, unleſs it has ariſen from a blow, or from the effort of ſpitting up blood, generally proves fatal (*Coac.* 438.). It is likewiſe a very hopeleſs caſe if the complaint be owing to calculi, ſtones, or rough bones growing in the lungs (54.), becauſe, as Bennet obſerves (*Theatr. Tab.* p. 100.), the lungs themſelves are lacerated by them; nor can they be made to unite again, unleſs, as ſometimes happens, theſe bodies are expelled by the cough. The phthiſis *trachealis* (57.) is ſometimes cured, if immediately at the very beginning it be properly treated, or if it proceed from the venereal virus.

66. The marks which follow are common to every ſpecies of conſumption. Nothing is more pernicious to conſumptive perſons than the diarrhœa *. It is likewiſe a very bad ſymptom if they ſpit up a great deal of crude matter, without any alleviation of the difficulty of breathing †. They run greater riſk in the autumn, and during warm rainy weather ‡, than at other ſeaſons of

the year. When they are ſeized occaſionally with rigors, it is a proof of the near approach of death ‖. When a diarrhœa has continued a long time, together with waſting of the body, if it ſuddenly ſtop, and the præcordia become raiſed, it affords an unfavourable prognoſtic §. Hippocrates ¶ pronounced it to be a fatal ſymptom if the expectoration of phtiſical patients be attended with great fetor, together with falling out of the hair, or if, when the matter expectorated is thrown into ſea-water or ſalt-water **, it ſinks to the bottom. Hence, according to Celſus, has ariſen the opinion of ſome who affirm †† that the purulent expectoration is to be diſtinguiſhed from that which is not purulent, by theſe two marks. But by theſe marks the bad diſpoſition of the pus only is indicated, not the pus itſelf, as the words of Hippocrates declare, and as Morgagni has properly remarked. And this appears more manifeſtly from the circumſtance, that Hippocrates, elſewhere enumerating the marks of good-conditioned pus, has obſerved that it ought to be white, inodorous, and ſmooth. Moreover, if by ſuch trials the nature of pus were to be diſcovered, many things ſeem to evince that ſuch a mode of aſcertaining it is uncertain and fallacious. For the matter expectorated by ſcorbutic perſons, although it be not purulent, is nevertheleſs generally fetid, and more ſo if it be placed on live coal, for whatever has an animal nature when put upon the fire emits a diſagreeable ſmell. It is likewiſe

generally ſalt, and therefore heavier; and if it be deprived, by ſhaking it, of its air-bubbles, it becomes ſo heavy, that when thrown into ſalt water, not to ſay common water, eſpecially when warm, although not purulent, it readily falls to the bottom. Nothing, therefore, more certainly points out the nature of genuine pus than the combination of ſeveral ſymptoms, contrary to what ſome ſuppoſe, relying upon a doubtful paſſage of Aretæus ‡‡. Theſe are the ſymptoms peculiar to the expectoration: A cineritious or yellowiſh colour, a particular manner of cohering, by which the lymph and phlegm ſeparate, and when poured upon water divide into threads and flakes; the phenomena of preceding or preſent ſuppuration, and the like, which cannot eſcape the notice of an experienced practitioner. Nor is the lightneſs of the expectoration any objection; for actual pus may be light if it be of a laudable kind, ſo as to readily float not only upon the ſurface of water impregnated with ſalt, or ſea-water, but alſo of common pure water, which is lighter. Its fetor, therefore, weight, or bad taſte, indicate a worſe diſpoſition or quality of the pus, but do not point out its nature. Nor do I think that whatever flows from an ulcer is to be named pus, as both ſanies and ichor of various kinds are frequently diſcharged by ulcers. Sanious and ichorous expectoration, therefore, muſt be carefully diſtinguiſhed from that which is purulent. And, laſtly, the expectoration which only in external

appearance reſembles that of pus, is not to be conſidered as purulent; for the mucous and coagulable fluids by ſtagnation and heat may become ſo concocted as to reſemble pus itſelf. The expectoration is then more properly named *puriform*.

* Hippocr. aph. 14. ſect 5. *Coac.* n. 436. † *Coac.* n. 445.
‡ Aph. 10. ſect. 3. || *Coac.* n. 443. § *Coac.* n. 287. 442.
¶ Aph. 10. ſect. 5. *Coac.* n. 434. ** *Coac.* n. 435.
†† Lib. iii. c. 22. n. 25. ‡‡ Morgag. *Epiſt. anat. med.* xxii. Rozier de la Chaſſagne, *Malad. de la poitrine*, p. 255.

67. As, therefore, phthiſis is a diſeaſe which, when of long ſtanding, is removed with the utmoſt difficulty, its progreſs muſt be early oppoſed. But in the great variety of the cauſes and ſpecies of the complaint (58.), no plan of treatment can be adopted ſo univerſally as to be accommodated to the different cauſes and varieties of phthiſis, and to their different ſtages or degrees. In general, however, it is neceſſary to remove the cauſe by which the defect or vitiation of the nutriment is occaſioned, or its appoſition to the parts to be nouriſhed prevented; to remove the diſeaſes from which the conſumption originates; to correct the acrimony of the blood; to prevent obſtructions and congeſtions, or to diſcuſs them when already preſent, that they may not give riſe to inflammation, ſuppuration, and ulceration; and, laſtly, to ſtrengthen the whole ſyſtem, or particular parts of it which are in a ſtate of relaxation.

THE CURE.

68. THE conſumption, therefore, which ariſes from the cauſes enumerated (43. 44.), requires thoſe remedies which remove tumours, fungus, ſcirrhus, ulcers, rigidity, callus, ſtricture, paralyſis, or other morbid conditions of the œſophagus and ſtomach, from which I have mentioned dyſphagia proceeds (*Chap. on Dyſphagia*); fuller, or more nutritious diet; aperients; ſaponaceous remedies; gentle purges, eſpecially thoſe compoſed of rhubarb; and, laſtly, ſtrengthening remedies, or thoſe which are calculated for checking exceſſive evacuations of every kind.

69. In the cure of the firſt ſpecies of *tabes dorſalis* (45.), if the precepts of Hippocrates deſerve to be regarded, we muſt immediately, at the commencement of the diſeaſe, have recourſe to emetics and cathartics, and next to the copious employment of whey, or aſſes milk, and, laſtly, of cows milk, for forty days; and for ſupper ought to be given, alica, or, what is at preſent in greater uſe, rice or barley gruel, or pottage of the flour of oats or ſago, and the like. Likewiſe delicate fleſh, eſpecially roaſted fowls, and freſh eggs may be allowed. Nor in the mean time muſt we neglect fomentations and the warm bath. But to theſe ſome prefer the cold bath, bark, and ſteel, as reſtoring tone and vigour to the relaxed fibres and whole ſyſtem. Tiſſot relies chiefly upon theſe in the treatment of this complaint *. And

Grainger aſſerts that ſteel poſſeſſes ſuch virtue, that he never diſcovered a remedy comparable to it. Likewiſe Frid. Caſim. Medicus †, recommends ſteel-filings in the tabes dorſalis ‡, but preſcribes along with them the employment of copious drinking. Moreover, it is neceſſary to abſtain for a year from intoxication, from venery, from exceſſive labour, although walking, and moderate riding in a carriage or on horſeback, are proper, attention being paid to avoiding the ſcorching heat of the ſun, or too great cold.

* Onaniſm. † Ludwig, *Com. de reb. in ſcient. nat. et med. geſt.* vol. iv. p. 236. ‡ *Id. ib.* ſuppl. to dec. ii. p. 223.

70. Nor is the treatment of the ſecond tabes dorſalis very different (46.), in which, however, both white wine, fiſh, and food which keeps the belly open, and milk with honey, for forty-five days, are allowed, as we learn from the book *De Internis Affectionibus*. It is there alſo preſcribed, if the body become ſwelled, to burn different parts of the neck, back, and loins, ſo as to form cruſts upon them: for, in conſequence of this ſucceeding properly, the health is reſtored. For the purpoſe of de-obſtructing the viſcera, and ſtrengthening the whole body, particularly the nervous ſyſtem, may be employed, for a great length of time, the neutral ſalts, as the *ſal mirabilis Glauberi*, or the *ſal polychreſtus*, or vitriolated tartar, with an infuſion of valerian-root, or along with its decoction, extract, or powder, as not a few patients have been obſerved to recover in that

way from this ſpecies of tabes; eſpecially if venery have been abſtained from, and exerciſe of body ſubſtituted in its place. Both in this and in the preceding ſpecies, while the patients employ the peruvian bark and other tonics, the beſt thing which can be given for drink is the *ptiſana Daliſbii*, which is compoſed as follows:—Rec. *Mala citrea n.* ij. *Eviſcerentur, deinde cont. in mortar. marmor. et ſenſim affund. decoct. hord. lib.* ij. *panis toſti unc.* ij. *ſyrup. moror.* j. *vin. veter. optim. unc.* vj.

71. In the third *tabes dorſalis* (47.) thoſe remedies ſeem to be proper which remove the primary diſeaſe, namely, *gonorrhœa*, or *fluor albus*. But if the complaint be occaſioned by an impure connection, mercury, the decoctions of the woods, and milk, are of ſervice. If otherwiſe, a method of treatment adapted to the variety of the cauſes from which the diſeaſe has ſprung, muſt be adopted. Our object muſt always be to correct and check the putrid flow by which the body is waſted. Purging, medicated waters, particularly chalybeate and gently balſamic and vulnerary remedies, are very much approved of. Nor muſt I here omit the cold-bath, of which moſt authors of the preſent day make mention.

72. When the *tabes* or *atrophia* from inanition is occaſioned by other immoderate evacuations (15.), the cure of the diſeaſes by which it is kept up muſt be commenced, and the defect of nouriſhment obviated by proper diet. But if the con-

ſumption be occaſioned by depraved or imperfect digeſtion, or chylification (48.), it is proper to have recourſe to bitters, inciding remedies, and pectoral tonics. But when a dyſcraſy and bad diſpoſition of the blood perverts and corrupts the nutritious matter, ſuch a morbid ſtate, which is pointed out by the ſymptoms peculiar to it, muſt be removed. Laſtly, when the tabes is occaſioned by a morbid ſtate of the ſolids, and the ſpecies of diſeaſe named by Morton *atrophia nervoſa* (49.) ariſes, the power of the nerves and other ſolids is to be rouſed, eſpecially by cordials, gentle aromatics, ferulaceous gums, antiſcorbutic remedies, thoſe prepared from vipers, chalybeates, frictions, exerciſe, long journeys, ſwimming, and by the moſt nutritious and eaſily digeſted food. The Engliſh are principally liable to this complaint, of which they frequently get rid by travelling into diſtant countries. Concerning this phthiſis, I imagine that Sydenham ſpeaks when he aſſerts, " that riding is as efficacious in the cure of phthiſis as bark in that of intermitting fevers." But the oppoſite method of cure is to be adopted in the *tabes ſenilis*, or any other ſpecies of the complaint ariſing from too great rigidity, and, as it were, *callouſneſs* of the ſolids, in order that they may be ſoftened, relaxed, and rendered penetrable by the fluids flowing into them. On which account the tepid bath, anointing the patient, gentle friction, the ſoup of frogs and turtles, oaten gruel,

and eſpecially whey, nay, aſſes milk, which Sydenham and others propoſe for averting the evils of old age, will be advantageouſly called in.

73. But in the *tabes* or *atrophia nervoſa*, ariſing from the whole habit, which has been improperly conſidered by ſome as a tabes dorſalis (50.), when it ought rather to be named *ſecondary incipient phthiſis pulmonalis*, whether it be conjoined with obſtruction of the ſpinal marrow or not, the cure intirely reſts on inciding, aperient, reſolving remedies, and thoſe which attenuate the fluids, and impart ſtrength to the fibres. Wherefore, as the author of the book *De Internis Affectionibus* preſcribes vomiting, it ought to be excited firſt by drinking vinegar and water, and by means of a feather dipped in oil thruſt into the fauces; after which the juice, both of beet boiled along with honey, and that of cabbage boiled with ſalt, may be drunk for a month. Next, interpoſing one month, during which the patient may eat animal food and drink wine, for another month he may uſe odoriferous and gently aromatic and ſtimulant herbs, as rue, aniſe, mint, corriander, baſil, parſley-roots, and the like; as attenuating and reſolving the viſcid humours, exciting the action of all the veſſels, and in ſome meaſure rouſing the nerves. He may likewiſe occaſionally employ fomentations, or the tepid bath, that by increaſing the perſpiration the whole body may be purified. He ought every day to take exerciſe at ſtated hours, increaſing it gradually,

until he at length extend his walk to 150 ſtadia * each day. In the mean time he may drink wine, firſt white and ſweet, and afterwards red and auſtere, and eat fleſh and victuals gradually more nouriſhing, fattening, and cartilaginous. For when treated in this way he may expect to be reſtored to health in a twelvemonth. Raulin (*Obſ. de Med. Art.* v. p. 61.) found this method of treatment to be conſiſtent with reaſon, and of the greateſt utility, as reſting upon certain indications; which, however, in the great variety of articles in the Materia Medica, every one will be at liberty to fulfil by different medicines at pleaſure.

* A ſtadium is 125 paces.

74. Laſtly, the fourth *tabes dorſalis* (52.), which, in my opinion, if it be not the ſame as the *rhachitis*, or *rhachialgia*, of modern writers, at any rate is exceedingly like it, requires the ſame method of treatment. It muſt therefore be oppoſed by bitters, antacids, aperients, by gummy and diaphoretic means, by hot ſprings and chalybeate waters, and by ſtrengthening remedies. Nor is it improper to reſtore the tone of the ſyſtem by friction and exerciſe; and the patient ought to breathe as much as poſſible the dry air of the plains, and to uſe ſimple, nouriſhing, and delicate diet. Rhubarb, in particular, with ſalt of tartar, tincture of antimony, the root of the *Oſmunda regalis*, of turmeric, madder, and wild

valerian, gum-ſagapenum, aſſafœtida *, or the flowers of ſal ammoniac, with ſteel, are believed to poſſeſs great efficacy in this diſeaſe. But the complaint generally defies all medical aid, and, after long continued pains, ſpaſms, pareſis of the limbs, bladder, anus, and the like, which gradually reduce the patient to a ſtate of *maraſmus*, terminates in death. I never ſaw it perfectly cured, although I have ſeen it ſo mitigated as to ſpare the patient's life for ſome years. Moreover, the *atrophia nervoſa* (53.), as it is occaſioned by an acrid dyſcraſy of the fluids, ſluggiſhneſs and defect of bile, and rigidity of the fibres, is uſually treated by means of diluent, correcting, and ſaponaceous remedies, as a ptiſan of the roots of graſs, taraxacum, ſuccory, and agrimony, with the addition of ſome neutral or ſubacid ſalt; by means of the juices of theſe plants with whey; by medicated, acidulous waters, ſlightly impregnated with ſteel and fixed air; by anodyne emulſions; by the tepid bath, and a bland vegetable diet. Likewiſe gentle emollient injections, travelling, amuſement, and exerciſe, are of the higheſt advantage in this diſeaſe. The ſpecies of the complaint, again, which is kept up by love or noſtalgia, requires gratification, or expoſtulating and ſoothing the patient's mind. The *ſecondary* ſpecies, occaſioned by hyſteria or hypochondriaſis, muſt be treated like the primary diſeaſe.

* See *Diſſert. de aſſafœtida*, Joh. Pundt. Goetting. 1778.

75. But I muſt now proceed to the cure of phthiſis pulmonalis (54.). In it we ought to endeavour to prevent any ulceration, or, when the lungs have already become ulcerated, to attempt the healing up of the ulcers with the greateſt diſpatch. Of which the firſt indication applies to the *incipient* phthiſis (54. 56. 59.), the ſecond to the confirmed (56. 60.). Hence, to remove all apprehenſion of ulceration taking place in the incipient complaint, a copious afflux of humours to the lungs muſt be checked, congeſtions diſcuſſed, obſtructions removed, tubercles diſſolved, any tendency to inflammation obviated, and every acrimony of the blood, or other vitiation of it, corrected.

76. It is therefore proper to gently purge the belly, repeating it ſeveral times at intervals *; to occaſionally let blood ſparingly, but at ſeparate intervals, eſpecially when any apprehenſion of ſuppuration is to be removed,—which the expeperience † of diſtinguiſhed authors has ſhewn to be a remedy, not only in threatening or *incipient* phthiſis, but likewiſe in that which is diſpoſed to degenerate into the *confirmed* complaint,—to derive the morbid matter from the cheſt by means of bliſters, iſſues, fomentations, the hot-bath, diuretics, and ſudorifics; to employ with caution diluent, attenuant, inciding, and aperient remedies; to aſſuage the ſpaſmodic and convulſive contractions and irritation of the cough, by demulcent

and oily remedies, and thoſe which act as ſheathers; and, laſtly, to ſtrengthen the ſyſtem and lungs by means of very nouriſhing and bland things. Among the diluent, attenuant, and aperient remedies, the loweſt rank is not held by the warm, acidulous, mineral waters. But in the employment of them we muſt uſe caution that the lungs may not be weakened more and more by taking them in too great quantity, or, if they have already ſuffered ulceration, that their ſenſibility or irritability may not be rouſed, which is attended with no ſmall injury to the patient, and which, it has ſometimes been obſerved, is principally occaſioned by the acidulous ſpring-waters. Some, therefore, endeavour to correct them by the addition of milk. Deſſault endeavours to reſolve the tubercles, by which, he is of opinion, this phthiſis is always produced, by the uſe of mercury, iron, or ſteel, and millepedes, above which he preſcribes to be drunk a decoction of the root of nettles, and of the juice of water noſe-ſmart, and cheveril, of each two ounces, and at the ſame time recommends riding at mid-day ‡. Lanciſi alſo endeavoured to reſolve the crude tubercles by means of ſweet mercury ſeven times ſublimated, but given in ſmall and repeated doſes. Nay, Brilouet ‖ evidently reſtored to health a woman and man labouring under confirmed conſumption of the lungs, by the corroſive ſublimate, after the manner of Van Swieten, and by the juice of water noſe-ſmart. The efficacy of

this remedy in the removal of this ſpecies of phthiſis is completely confirmed by its frequent uſe, and the excellent effects which are generally experienced from it in *Lorrain* §.

* Fernelius's excellent compoſition for purging the belly is as follows:—Rec. Man. elect. unc. j. Solv. in s. q. aq. com. add. aq. Caſſiæ decoct. unc. j. Olei amyg. dulc. unc. j. M. in mort. marm. exacte. Doſ. in cochl. j. ſingulis iv. horis vel j. mane, et veſp. item.

† Dovar & Cohauſen, *Edinb. med. eſſays*, vol. iv. Van Swieten on Boerhaave, aph. § 1210. Ludwig, *Com. de reb. in ſcien. nat. et med. geſt.* vol. ii. p. 401. Biſſet, *ibid.* vol. v. p. 617. ‡ *Edinb. med. eſſays*, vol. vii. p. 121. || *Journ. de med. Nov.* 1777. § Clere, *Hiſt. nat. de l'homme*, vol. ii. p. 35.

77. In *confirmed conſumption*, however (56. 60.), when the lungs are at length conſumed by an ulcer which communicates a purulent taint to the blood, it is better in that caſe to abſtain from bleeding; unleſs a pleuritic pain, violent fever, and difficult reſpiration, indicating a freſh ſuppuration, require it; to cleanſe the ulcer by ſweet and ſaponaceous remedies, and ſuch as excite an expectoration; to oppoſe the corruption by ſubacid and vulnerary antiſeptics; and, laſtly, to induce a cicatrix by the mildeſt exciting balſams. The *dulcamara*, or *ſolanum ſcandens*, is with reaſon celebrated on account of exciting an expectoration; from uſing a decoction of which Werlhof, when labouring under an ulcer of the lungs, derived great advantage, and at length recovered (Clerc, l. c. p. 35. 36.). But a great quantity of pus is expelled by its ſtalks when boiled in water, and thus the ulcers of the lungs are very power-

fully cleanſed. To the claſs of drying and balſamic remedies ought to be referred, agreeable and ſtrong-ſmelling perfumes *; dry pure air; ſugar of red roſes; lime-water, both ſimple and compound; the vulnerary plants, as ſanicle, milfoil, ground-ivy, comfrey, betony, the tops of the *Hypericum equiſetum*, agrimony, and the like. With regard to roſes, Clerc † affirms, that in Spain phthiſis and ſlow fevers uſed to be cured after the method of Avenzoar, namely, by the copious uſe of conſerve of damaſk-roſes, by a milk diet, and hydrogala given for drink. *Ornithogalon*, commonly called *lac gallinæ*, would well deſerve becoming the ſubject of experiment in the hands of a judicious phyſician. For it is highly commended by Harvey, for the cure of ulcerous conſumption ‡, as being antacid, abſtergent, and gently drying. In Tranſylvania the inhabitants employ an infuſion of ſun-flower or dwarf-ciſtus, with white or yellow flowers, by means of which alone, as Cromer mentions ‖, they are ſucceſsful in removing conſumptions attended with a ſpitting of blood and pus, together with difficult reſpiration. This infuſion, if it be a ſtrong one, excites nauſea and vomiting.

* Bennet, Willis, Nic. Piſo, and other authors, make mention of the utility of perfumes in the cure of phthiſis. Billard, as we are informed by Louis (*Mem. de l'acad. roy. de chir.* vol. v. 1774, p. 549.), extols their efficacy, and adduces examples in their favour. He conſiders moiſt perfumes as being hurtful, on account of the relaxation of the lungs. He affirms that balſamic vapours are extremely beneficial. He takes one pound of yellow freſh wax, and an

equal weight of common reſin, or dry pitch, or, which is better, of turpentine, and places them in an earthen veſſel, upon a fire in the middle of the bed-chamber where the patient ſleeps, and thus the air is impregnated with medicated vapours. Likewiſe ſome canadian, or peruvian, or other balſam, may be added. From having experienced the ſucceſs of them, he places much reliance on theſe vapours; but he does not condemn moiſt perfumes and vapours, even in the *dry pectoral cough*, which is, as it were, the forerunner of phthiſis, in *dry* or *convulſive aſthma*, or in *vomica*.

† *Id. ib.* ‡ *De art. cur. morb. expect.* p. 230. ‖ *Commerc. Norimb. ann.* 1732. p. 19. & *ann.* 1738. hebd. 3.

78. But nothing is allowed, by almoſt univerſal conſent, to be more efficacious than milk itſelf, both for blunting acrimonies and nouriſhing the body, and alſo for uniting the lips of the ulcers. Hippocrates himſelf had noticed this, as he has left it as a maxim in his writings, "That milk is to be given to conſumptive patients," (Aph. 64. ſect. 5.); providing, however, they be not very feveriſh, and have no head-ach, as I interpret it, from weakneſs of the ſtomach; and their hypochondres be not raiſed, that is, obſtructed, or diſtended with flatus; and they do not labour under thirſt; and if nothing elſe contra-indicate it. He likewiſe prohibits thoſe patients from the uſe of it who labour under an acute fever, who paſs bilious ſtools, or, on account of loſs of blood, labour under the greateſt degree of languor of all their functions, inſomuch that there is reaſon to apprehend that it cannot be digeſted, but becomes corrupted.

79. Women's milk is univerſally ſuppoſed to be preferable to other kinds, becauſe, on account of being thinner and leſs caſeous, it is eaſily di-

geſted by a weak perſon; nor is it ſo apt to become acid, as, on account of the animal food which women uſe, it is in its nature in ſome meaſure equally prone to alkaleſcence. It is preferable, therefore, when an acid acrimony is either already preſent, or is apprehended, as in children and weak people. And as it ſeems to be thin, ſerous, and more allied to our fluids, it is more readily converted into animal and nutritious juice. It ought to be ſucked from the very breaſts, that nothing of the fine halitus may be loſt. The woman, alſo, from whom the milk is taken, ought to be young and healthy, and ought to live upon ſalutary food, accommodated to the circumſtances of the patient. After women's milk we recommend that of aſſes; nor does Hoffman differ in opinion from us (*Diſſert. de Lac. Aſſinin.*), as he found it to be more ſalt, and to abound with a greater quantity of *eſſential oil*; and therefore judged it to be well calculated to prove diluent, reſolving, and cleanſing. Next in order ſucceeds goats milk, and after it that of cows; of which it has been diſcovered, that the former excels on account of its thinneſs and vulnerary efficacy, and the latter on account of its thickneſs and nutritious quality, from its containing more butyraceous and caſeous matter. To theſe ſome add ſheep's milk, on account of its being generally conſidered as being thicker, more caſeous, and containing leſs butter. It is a more common opinion that horſes milk approaches nearer to the nature of aſſes milk. That

kind, therefore, which ſeems to be beſt adapted to the indications and circumſtances of the diſeaſe, ought to be choſen.

80. Moſt are of opinion, nay, preſcribe, that the patient ſhould commence with aſſes milk, proceeding next to goats, and, laſtly, to cows milk. Nor ought it at the beginning to be given copiouſly, but the patient ſhould proceed gradually, by making trial of it, to the neceſſary quantity. If, when taken in this manner, it be properly digeſted, if it do not become acid nor corrupted, nor excite nauſea, vomiting, griping, or diarrhœa, nor aggravate the fever; we may allow the milk more liberally, and in repeated draughts, ſo that the patient may live upon it alone for ſome weeks. But in order that it may be more readily kept upon the ſtomach, the *primæ viæ* ought to be firſt gently purged, and the bowels ought to be afterwards kept open by frequent injections; nor muſt we omit thoſe alkaline and abſorbent remedies, which are conſidered as being ſafer, and leſs liable to oppreſs the ſtomach and inteſtines. For by means of them the cauſe of the acidity, if there be any preſent, is as far as poſſible prevented. Others endeavour to attain this end by means of a little ſoap, which has the additional advantage of very gently rouſing the action of the bowels.

81. Some endeavour to render the milk more ſerous by artificial means, or medicate it by particular additions. Hence ſome drink ſkimmed

milk, others that which is mixed with the water of *Nocera*; while others drink that which is mixed with vulnerary decoctions, or ſugar, or honey. But the addition of lime-water is celebrated on two accounts; not only becauſe by means of it the milk is prevented from becoming coagulated and acid, but alſo becauſe it acquires a bland property of cleanſing and drying the foul ulcers. But, above all, it is generally conjoined in the ſpring and ſummer ſeaſon with mineral or acidulated waters, on which ſubject I refer to the frequent trials of almoſt all practitioners. Whoever wiſhes for ample information upon the properties of milk, eſpecially in the cure of phthiſis, and the method of employing it, may peruſe a very learned diſſertation publiſhed ſome years ago by Gallo, a phyſician of conſiderable reputation *. Moreover, the obſervations of Redi, Delpapi, Gyrilli, Beccaria, Hoffman, and others, concerning the uſe of milk, and the various modes of employing it, well deſerve being conſulted †.

* *Diſſertazione del vero, e ſicuro metodo dell' uſo del latte, e ſuo abuſo nella medicina di* Giammichele Gallo.

† Many authors have examined the intimate and medical powers of milk, among whom, to paſs over the little work of Beccaria, and my own analyſis of it, publiſhed an. 1772, a conſpicuous rank is held by Young of England, and Waſſerberg of Germany. The theſis of the former, publiſhed at Edinburgh an. 1763, may be found in the *Theſaurus diſſertationum, programmatum aliorumque opuſculorum ſelectiſſimorum, &c.* of Sandifort, vol. ii. art. xxiii. Roterdam 1769. The chemical analyſis of milk publiſhed by the latter is to be found in the ſecond faſciculus of the *Opera minora medica et diſſertationes*, publiſhed in the year 1775 at Vienna.

82. But although milk appears to be admirably adapted to phthiſical patients, eſpecially ſuch as have fallen into conſumption from hemoptyſis, it muſt not be employed indiſcriminately by all who labour under the complaint, nor at every period of the diſeaſe. For, in addition to the circumſtances which, from the admonition of Hippocrates, I have already ſhewn ought to be taken into conſideration (78.), it is likewiſe of great conſequence to carefully inquire whether the ulcer of the lungs be conjoined with obſtruction of the abdominal viſcera, or with crude, ſtrumous, or ſcirrhous tubercles, or has ariſen from the ſuppuration of them. For in that caſe the complaint may be aggravated by the caſeous part of the milk, which abounds with gluten and mucilage. Sometimes, likewiſe, ſuch is the quantity of pus contained in the ulcer, that it cannot be intirely thrown off by ſpitting, or it is ſo deep ſeated that it does not communicate at all with the bronchia. In both caſes the blood, in conſequence of the abſorption of pus, becomes contaminated, colliqueſces, and, when thus vitiated, very quickly corrupts the milk itſelf; in conſequence of which ſome are of opinion that a new fomes is ſupplied to the complaint *. Generally the diarrhœa which follows or accompanies this colliquation increaſes immoderately, if it be already preſent, or, if it have not yet come on, is very quickly occaſioned. Nor is it of any ſervice, as ſome adviſe, to boil roſes in the milk, or to mix

it with water prepared with ignited ſteel, or to add other aſtringents. For it ſeldom happens that by means of theſe remedies the corruption of the milk, and diarrhœa, by which the patient's ſtrength is reduced, are ſufficiently prevented. But if an acid or putrid colluvies in the *primæ viæ* cauſe the milk to become acid, the acidity is ſometimes removed by cathartics, bitters, and abſorbents, after which the milk turns out ſerviceable. Among the bitters the peruvian bark employed after gentle purgatives holds the chief rank. Deliſle likewiſe admits of the cautious employment of an emetic †. It is then better to have recourſe to a diet of oaten flour, to the cream of barley or rice, to the *ſerum lactis dulce* of Hoffman, decoctions of fine bread, and the like. In place of the milk likewiſe are ſubſtituted, the ſoup of frogs, of the tails of river-crabs, and of the fleſh of ſnails, which if they do not remove the diſeaſe, at leaſt render it milder.

* Raulin, *Obſ. de med.* ſect. iii. art. 3. & 4. Rozier de la Chaſſagne. l. c. p. 308. Deliſle, l. c. P. iii. c. 3. p. 287. † *De la phthiſ. pulm.* P. iii. c. 1. p. 225.

83. Both in this caſe (82.), and in the ſcorbutic or ſcrofulous phthiſis, as it is called, in which the fever is either altogether abſent, or ſlight, or not continued, and a glutinous expectoration, like that of aſthmatic people, is diſcharged, the cure, not only at the beginning, but when the diſeaſe is far advanced, is very much promoted by the balſamic pills of Morton *, which, on ac-

count of their inciding and reſolving property, ſubdue and eradicate the proximate cauſe of the complaint †. But as their irritating quality may ſometimes exaſperate the cough, phlogoſis, or fever, a different formula of them may be employed, calculated to the circumſtances. It is my practice to compoſe them of gum-ammoniac, the powder of millepedes, and the concrete juice of ground-ivy, or ſcabioſa, omitting the other ingredients, which are too heating, and quicken the circulation too much. Sometimes I have employed Venice ſoap with the greateſt advantage. Likewiſe the newly-expreſſed juices of the antiſcorbutic plants, and gently-aperient decoctions of them, which are conſidered as being excellent pectorals, deſerve being employed in this diſeaſe.

* The formula of the pills of Morton.—Rec. Pulv. milleped. pp. drach. iij. Gumm. ammon. optim. depurat. drach. j. ſemis. Flor. benz. ſcr. ij. vel. drach. j. Extr. croc. balſ. peruv. an. ſcr. j. ſemis. Balſ. ſulph. terebinth. vel aniſ. q. s. M. f. pil. mediocr. deaur.

† Morton, *Phthiſiol.* l. 2. c. viii. p. 63. Geoffroy, *Mat. med.* vol. i. p. 100.

84. In the ſpecies of phthiſis which ſeems to ariſe from atony and laxity of the lungs (54. 60.), the peruvian bark has frequently afforded the greateſt relief. Loeſek, in his own perſon, employed it with ſuch ſucceſs, that he no longer coughed up either pus or blood *. I myſelf have more than once obſerved a ſpitting of pus and blood, by which an attack of phthiſis pulmonalis ſeemed to be pretty manifeſtly threatened, in per-

ſons who had fallen into this complaint in conſequence of labouring under hypochondriaſis, and who had already begun to fall off gradually, ſucceſsfully checked by means of an infuſion of peruvian bark, ſometimes without the addition of milk, and at other times along with it. But its wonderful efficacy appears much more certainly in thoſe patients who, from their infancy, have laboured under ſcrofulous affections, whenever they are obſerved to have a diſpoſition to phthiſis pulmonalis. For Meade affirms that the complaint, when threatened, is to a certainty warded off by this bleſſed remedy †.

* See *Com. de reb. in ſcien. nat. et med. geſt.* vol. v. p. 116. Geoffroy, l. c. vol. i. p. 282. † *Monit. et præc. med.* c. i. ſect. x.

85. Nor is it a ſafe practice, in *confirmed conſumption*, to employ emetics (Hipp. aph. 8. ſect. 4.), or cathartics and acrid diuretics. For the ſtrength, which is already almoſt completely reduced, is apt to be wholly overcome by them: but the body, which is univerſally falling off and becoming dry, is more and more exhauſted of its fluids. On this account ſudorifics, properly ſo called, ought to be ſuſpected, and are deſervedly rejected. I am aware that decoctions of the wood of guaiacum, ſaſafras, ſarſaparilla-root, and the like, are recommended by many to reſolve congeſtions, to purge the body of a ſerous or lymphatic colluvies, and to purify the blood; nay, even to cleanſe and dry the ulcers of the lungs when they ſeem to proceed from a bad habit of bo-

dy and bad-conditioned fluids, that they have been employed with great hopes of benefit. But they agitate the fluids too much, dry the body more, increaſe the emaciation, and aggravate the fever in perſons of a dry and warm temperament, and of a ſlender habit, or in thoſe who are already much exhauſted by the diſeaſe. If, therefore, they be admiſſible in any caſe, they are to be employed only at the beginning of phthiſis, when the body is not reduced, and in fluid phlegmatic habits, rather with the view of preventing than curing the complaint.

86. Thoſe, however, which act more mildly, and which are prepared from the root of bark, of rough bind-weed, mountain-reed, burdock-root, barley, veal, frogs, and the like, and are in ſome meaſure corrected by the addition of borage, ſow-thiſtle, and ſuccory, or mixed with milk, are not to be wholly rejected. For they correct, diſſolve, and allay acrimonies, and expel them with all manner of ſafety by the kidneys or ſkin. In the ulcerous phthiſis, or when its approach is apprehended, nothing is more uſual, both among phyſicians and ignorant people, than preſcribing and raſhly employing balſamic remedies. But in Italy, here they are generally rejected by ſkilful practitioners, as proving injurious to the ſtomach, aggravating the fever, increaſing the heat, and inflaming the lips of the ulcers. Nor do the prudent phyſicians of other countries diſagree

with us *, from their having ſeen too frequent inſtances of the ſad effects produced by the haſty and imprudent employment of ſuch remedies.

* Geoffroy, *Mat. med.* vol. i. p. 444. Fothergill, *Com. de reb. in ſcien. nat. et med. geſt.* vol. xviii. par. 3. p. 400.

87. But ſometimes the ulcers of the lungs ſo abound with pus, and appear to be ſo foul, as to require being cleanſed by theſe remedies. Not unfrequently alſo, ſo extenſive is the diffuſion of the purulent vitiation of the fluids, that it becomes neceſſary to oppoſe it by means of balſamics. If, therefore, their employment be admiſſible for theſe reaſons, the ſafeſt and mildeſt only ought to be uſed; as the balſam of Tolu; the balſamic ſyrup of the London Pharmacopœia, or that of turpentine; Venice turpentine ſlightly boiled in water; and likewiſe the *aqua thedæ*, in Italy commonly called *goudron*, or *catrame*; which alſo, on account of poſſeſſing a very mild acid, oppoſes the putrid diſſolution of the body. But I conſider ſcarcely any thing as being better calculated for cleanſing and healing up the ulcers, or for checking the corruption, than the long-continued and liberal employment of camphor given internally, from which the injury cauſed by balſamic remedies can hardly be apprehended.

88. I cannot here omit mentioning two remedies, to which I find a phthiſical virtue, of I know not what kind, aſcribed, namely, moſs, or the *lichen iſlandicus*, and the Engliſh *elixir of vitriol*. But I have not yet been able to determine

with what juſtice they are celebrated. Let time, rather, and repeated experience, determine it. With regard to moſs, Borrichi has already made ſome mention of its purgative quality *. But I know of no one who has ſpoken any thing of its antiphthiſical virtue before Linnæus. For we learn from his diſſertation *concerning the uſe of the moſſes*, publicly defended in the year 1760, that the inhabitants of Sweden prepare a pottage, which is not of an unpleaſant taſte, with the lichen iſlandicus, which they uſe as a remedy againſt conſumption †. They throw away the water of the firſt boiling, that it may not purge the belly. But ought we not rather to aſcribe its good effect to the milk? In the next place, Scopulus mentions, and endeavours to confirm it by a number of inſtances, that not only ſwine, horſes, and cows, are fattened by it within a ſhort time, but alſo that when boiled with milk remarkable benefit has been produced by it in conſumption, rickets, and cachexy (See *An. Sec. Hiſtor. Natur.* Lipſ. an. 1769). He therefore aſcribes to it a nutritious and ſtrengthening property ‡. Schoenheyder, in conſequence of repeated trials of it, has ſhewn, when inflammation and fever are not preſent, that it poſſeſſes a peculiar medical property in removing diſeaſes of the cheſt ‖. For by means of the *moſcus iſlandicus* § he reſtored to health twelve children, who, in conſequence of meaſles, had been attacked

with a purulent cough, accompanied with pain and oppreſſion of the cheſt, and emaciation, while their appetite remained uninjured, after the oxymel of ſquills, kermes mineral, bliſters applied to the breaſt, oily linaments, the theriac of Andromachus, and the peruvian bark, had been employed in vain. At firſt the pain was immediately diminiſhed; in a week or two afterwards, all the ſymptoms were changed for the better, until within the ſpace of five weeks they recovered intirely. Thoſe in whom a diarrhœa was occaſioned,—for I have already obſerved that the belly is relaxed by it,—were freed from this inconvenience by an emulſion of gum-arabic. It is to be obſerved, however, that ſuch coughs, although attended with purulent expectoration, after a certain length of time which they go through, generally ceaſe of their own accord, without the aid of medicine, or at leaſt by common means; and this I wiſh to be noticed, that it may not be concluded from the obſervation adduced, that this remedy poſſeſſes more efficacy than in fact it does. It is an acrid and irritating remedy, and, on account of this property, appears both to purge the belly, and to act as a deobſtruent and diuretic. Are its antiphthiſical virtues to be aſcribed to theſe properties?

* *Act. Haunien.* an. 1674. † *Linn. amœnit. acad.* vol. vii. n. 145. ‡ An. 2. *Hiſt. nat.* p. 107. || *Collect. ſoc. med. Haunien.* vol. i. p. 126. § The formula which he uſed was as follows:---Rec. Muſci iſland. unc. j. Decoq. in aq. commun. unc. xvj. ad remanent.

unc. xij. Collat. adde ſyr. ſcillit. unc. dimid. Detur unc. j. quo vis trihorio. See Chap. i. Of Cough, par. 16.

89. The elixir of vitriol, De Haën obſerves, is extolled in England as a remedy in dyſpnœa and ſuppuratory diſeaſes of the lungs *. Its compoſition is contained in the London Pharmacopœia †, which exhibits a particular aromatic tincture in ſome meaſure corrected by the vitriolic acid. Hence the aromatic quality, which may be conſidered as ſuſpicious, is counteracted by the vitriolic acid; and again, the vitriolic acid is ſweetened by the aromatic ſpirit of the wine, ſo as not to be too abundant. Trials made by it in *purulent phthiſis* were attended with ſuch ſucceſs, that Dr Pate, a learned phyſician of London, who at firſt would neither admit the remedy, nor credit the cures performed by it, at length convinced by experience, became a moſt ſtrenuous advocate for it. But it is ſaid that this remedy is moſt frequently employed in the phthiſis which ſucceeds to long-continued fevers, attended with a foul tongue and loſs of ſtrength; and that its excellence has become known to the whole world, of late years, in the caſe of ſome hundred patients †. This remedy is given from twelve to twenty-five drops, once, twice, or thrice a-day, in ſuch a quantity of water as ſcarcely leaves any acid taſte. It is given to children in honey and water. In them we may proceed gradually from a ſmall doſe to forty drops daily. It is neceſſary to continue the uſe of the

medicine for two or three months or more, nay for years, if the diſeaſe do not intirely ceaſe, being only alleviated. The Engliſh at the ſame time employ a decoction of bark with milk; and aſſert that no injury ariſes from it, as might be apprehended from the coagulation of the milk. De Haën mentions having employed this remedy in ſeveral patients advanced in life with ſuch ſucceſs as exceeded all expectation, and with a great diminution of the expectoration and cough, but that it proves moſt ſerviceable in that ſpecies of phthiſis in which the inflammatory and ſuppuratory matter of the whole body is collected in the ſound lungs (60.), and ejected in the form of expectoration, and that he frequently found that ſuch a diatheſis of the blood is powerfully corrected by this elixir ‖.

* *Rat. med.* P. xii. c. vi. p. 239. † Rec. Tinct. aromat. M. lib. j. Spir. vitr. fort. olei dicti p. unc. iv. M. gradat. et poſtquam fæces ſubſederint, per chartam cola. The aromatic tincture is prepared in the following manner:—Rec. Cinamom. drach. vj. Semin. cardam. minor. decortic. drach. iij. Piper. longi, zingib. ſinguſ. drach. ij. Spir. vin. tenuioris M. lib. ij. Digere ſine calore et cola. ‡ De Haen, *ibid.* p. 253. ‖ *Id. ib.* p. 250.

90. Likewiſe the ſoap and fleſh of vipers, prepared in a particular manner *, are not deſtitute of efficacy, whatever ſome phyſicians of celebrity, who have not experienced their medicinal powers, may think to the contrary †. For I look upon it that the authority and experience of Galen ‡, Aretæus ‖, Antonius Muſa §, Cœlius Aurelianus ¶, Meade **, Morgagni ††, De

Haën ‡‡, and many others, is to be valued more than the idle objections of a few cavillers. Nor is the efficacy of vipers remarkable alone in incipient phthiſis occaſioned by a bad habit of body, but likewiſe in the confirmed conſumption, and in the caſe of internal abſceſſes, as we learn from the cleareſt experiments, particularly of Morgagni ‖‖ and De Haën §§. For they poſſeſs an analeptic, nouriſhing, ſtrengthening, and gently-diaphoretic property, by means of which both the ſtrength, complexion, and nouriſhment, are reſtored to the ſyſtem, and the faulty conditions and acrimonies of the blood removed.

* Galen employed either wine in which vipers had been ſteeped, or vipers themſelves boiled in a pot in the manner of eels. Aretæus gave them boiled, and ſeaſoned with ſalt and oil, by way of ſupper. They were likewiſe preſcribed to be eaten,---probably boiled like fiſh,---for the healing of ulcers, by Antonio, a phyſician of Italy, who ſeems to have learnt the uſe of that remedy from Crator, whoſe pupil he probably was, as Meade imagines. In Italy, here we employ the powder and ſoup of them: but in powder they ſcarcely poſſeſs any efficacy. This, however, is not the caſe with the ſoup and fleſh of them when newly killed. One half of a viper, or even a whole one, with chicken-fleſh or veal, is boiled in a cloſe veſſel, in a ſea-bath, with a proper quantity of water, and the ſoup made from it drunk off morning or evening, or both morning and evening, for a length of time. Others add frogs and the fleſh of ſnails, or vegetables calculated for the diſeaſe; but even without the aid of theſe the efficacy of vipers is ſufficiently manifeſted. Their fleſh, again, is cut down and minced with crumbs of bread, delicate fleſh, and the whites of eggs, and boiled up in this manner they are given to the patients by way of food. Morgagni, whom De Haen imitated, uſed to give the fleſh of vipers that remained after the decoction, mixed with ſugar of roſes, over which he cauſed his patients to drink the ſoup which had been made from boiling them.

† See note * on par. 142. Vol. III. in which the author diſcuſſes the excellence of this remedy, and defends it againſt its oppoſers, and, among the reſt, Tiſſot. ‡ *De ſimp. med. facult.* l. ii. c. 1. || *De cur. morb. chron.* l. ii. c. 13. § Plin. *Hiſt. nat.* l. xxx. c. 13. ¶ *Morb. chron.* l. iv. c. 1. ** *De ven. tentam.* 1. †† *Epiſt. anat. med.* lv. n. 14. *et ſeq.* ‡‡ *Rat. med.* P. xiii. c. vii. p. 227. *et ſeq.* |||| L. c. §§ L. c.

91. Laſtly, although the primary diſeaſe appears to be incurable, our attention muſt be turned to the alleviation of the ſymptoms. The diſtreſſing cough rendering the nights ſleepleſs, requires opium, and remedies containing it. For by means of them its force is broken, and it is allayed for ſome hours. By means of opium alſo, immoderate evacuations of every kind are checked and ſtopped. The violence of the cough is likewiſe allayed and reſtrained by the ſyrup of white poppy, by emulſions of the cold ſeeds, by the freſh prepared *pulvis Haly Abbatis* *, and other remedies already pointed out (10. to 15.). The diarrhœa is allayed by abſorbent and ſtrengthening remedies; but the diaſcordium Fracaſtorii, and the theriaca Andromachi, hold the chief rank, on account of containing opium. The ſweats, eſpecially when they proceed from laxity of the ſolids, or are kept up by it, which very frequently happens, are in ſome meaſure checked by the decoction of peruvian bark, or that of the leaves of ſage drunk off cold. Nor is it improper to drop into it a few drops of the ſpirit of ſweet vitriol, or of the elixir of vitriol, particularly if there be any reaſon to ſuſpect that a putrid colliquation is pre-

ſent. It has been aſcertained by experience, that ſuch colliquative ſweats are to a certainty checked by lime-water, provided it be given mixed with a little new milk, to the extent of a pint daily †. The purulent expectoration likewiſe, when it is not eaſily diſcharged, or, on account of being ſuppreſſed, overloads the lungs by its exceſs, is to be called forth by means of expectorant remedies. The means which are properly calculated for this purpoſe have been already repeatedly pointed out. I likewiſe lately recommended the ſtalk of the dulcamara boiled in water ‡, by means of which I have frequently obſerved a great quantity of pus diſcharged from the lungs. Likewiſe when the lungs are ulcerated, they are ſaid to heal them. The inſtance of Werlhof, already mentioned (77.), who, when labouring under an ulcer of the lungs, recovered from the employment of this remedy, as Clerc mentions, favours our opinion. Sometimes a fixed pain in ſome part of the cheſt proves exceedingly diſtreſſing to conſumptive patients; for removing and allaying which Pringle ‖ and Lieutaud § mention, that nothing is more efficacious than a ſeton inſerted in the part affected. This pain generally proceeds from the lungs being eaten through, and from the pus corroding the pleura and intercoſtal muſcles. It is not ſurpriſing, therefore, that the pain ſhould diſappear upon a paſſage being opened for the pus by the ſeton. Sometimes without, in fact, diſappearing, it appears to be as it were obli-

terated by the greater pain excited on the ſurface, becauſe the more intenſe degree of the latter renders that of the other ſcarcely perceptible ¶.

* See its deſcription in the *Antidotarium Bononienſe.*

† The *formulæ* in which the dulcamara is uſually preſcribed are as follow:---Solani ſcandentis ſive ſtipitum dulcamaræ in fruſtula ſectorum unc. dimid. Duoque in lib. tribus aq. font. ad lib. j. remanentiam. Colaturæ adde ſacchari parum ad gratum ſaporem. Dentur ſing. hor. duo cochlear.: from Clerc. Or, from the ſame author, another:---Rec. Stip. dulcam. ſciſſ. et leviter contuſ. drach. ij. Infunde in s. q. aq. ferventis per horam dimid.; deinde momento ebulliant. Colaturæ lib. j. et ſemis adde oxym. ſimpl. ſyr. flor. papav. rhœados an. unc. j. miſce. Dentur omni bihorio unc. ij. vel iij.

‡ Pringle, *Diſeaſes of the army.* || L. c. § *Synopſ. univerſ. prax. med.* l. i. ſect. 3. p. 165. edit. Venet. See alſo Brindelii *diſſert. De phthiſ. et hect. diſcrim. et ſetaceorum utrobique uſu.* Gotting. 1754. and *Le roy ſur l'ecorce de Garou.* p. 123.

¶ I ſhall beg leave to tranſcribe a hiſtory from the Italian Journal of a celebrated writer, to ſhew that in phthiſis pulmonalis both lime-water, as well as balſamics and ſetons, and other powerful remedies, if they be not employed ſparingly and cautiouſly, ſometimes prove more detrimental than ſerviceable, and that nature in it delights more in a ſimple than a complicated method of treatment. I have faithfully tranſlated the paſſage from the author's own manuſcript. "In the month of May of the preſent year, I was called to Eſther Caſſia, a young woman of twenty-two years of age, then confined to bed with an ulcerous phthiſis pulmonalis, attended with a troubleſome cough, purulent expectoration, a ſymptomatic hectic fever, and extreme emaciation. About a year previous to this period, her menſes, which were then flowing, had ſuddenly ſtopped in conſequence of terror, nor did they afterwards return. Such was the origin of her complaint. Shortly afterwards ſhe was attacked with a dry cough, which for two months ſhe continued to diſregard, as being altogether a catarrhal one. But on fever ſupervening, attended with great difficulty, both of breathing and of lying down, ſhe was ſeveral times bled by the advice of a phyſician, and other means were employed without any advantage. A vein was opened

ten times; bliſters were four times applied, and a fifth time between the ſhoulder-blades; a ſeton was inſerted under the axilla; then the balſamic pills of Morton, and the ſtrongeſt lime-water, taken every day to the extent of thirty ounces, which almoſt induced the patient's death; and other remedies of this deſcription were employed. For a great length of time the poor girl was put to the greateſt diſtreſs to no purpoſe. On which account thoſe violent remedies being diſmiſſed, ſhe was put upon a milk diet alone. In conſequence of it all the ſymptoms abated. The cough was relieved; the expectoration rendered eaſier; the matter expectorated became more ſparing, leſs fetid, and of a better diſpoſition; the breathing became freer; ſhe could lie on either ſide without inconvenience; and the fever alſo abated. From which, if I miſtake not, we may infer the ſuperior excellence of this ſimple method of treatment, which is doubtleſs to be preferred to that which is more complicated, eſpecially in this taint of the lungs. Being aſked my advice, I recommended particularly the pure warm air of the country, although it hardly appeared that any cure was to be expected from medicine. But as the diſeaſe did not yet ſeem to have attained its acme, or third degree, as it is called (for there were no nocturnal ſweats, no diarrhœa, nor any oily urine), her recovery was not to be altogether deſpaired of. I have related this hiſtory to ſhew that too violent and active remedies are employed likewiſe among our countrymen, after the manner of the Germans, either becauſe ſome of them have been educated in the Tranſalpine ſchools, or becauſe they wiſh ſervilely and raſhly to imitate the Tranſalpine phyſicians." So far the author goes. But I would not have any one ſuppoſe that the Tranſalpine phyſicians were ever deſpiſed by him; nay, as he was well acquainted with the learning and medical ſkill of many of them, he held them in great eſtimation, and contended that they juſtly deſerved being univerſally eſteemed. All that he required of ſome of the modern practitioners was, that they would not employ in the cure of diſeaſes too many or too violent medicines, thus ſwerving widely from the practice of the ancients, and that they would not rely too much upon ſuch uncertain and fallacious remedies; into which error he complained that ſeveral of the French practitioners, as well as the Germans, and ſeveral of the Italians alſo, following their footſteps, occaſionally fell, to the diſadvantage of the art, as well as to the detriment of their patients. See his excellent obſervations in his notes upon par. 50. of Vol. I. concerning ſe-

vers, and the remarks he has all along delivered upon this ſubject. *Germ. Editor.*

92. So far concerning the cure of primary phthiſis. In the ſecondary and ſymptomatic ſpecies, however (55.), our whole care ought to be directed to the diſeaſe from which it firſt proceeded, or on the continuance of which it ſtill depends. For unleſs it be removed, it will be impoſſible to overcome by any means, however efficacious, the diſeaſe which is dependent upon it. The cure muſt therefore be oppoſed to the primary complaint, of whatever kind it be. If, for example, conſumption originate from ſcurvy, or from an hypochondriacal affection, thoſe remedies muſt be employed which are calculated to previouſly remove theſe diſeaſes. Thus, if the complaint proceed from a ſcabious, herpatic, or other taint of that kind, the juice of taraxacum, fumitory, ſuccory, lapathum, ſorrel, or decoctions of theſe plants; whey; baths, both of freſh water, and of ſulphureous and medicated water, and other remedies of this claſs, promiſe relief. But that which is found to be attended with the greateſt advantage, is the crude antimony reduced to a very fine powder. For it corrects the peculiar acrimony, attenuates the thick humours, expels thoſe which are vitiated by increaſing perſpiration, and prediſpoſes the body to become fat. Antivenereal remedies muſt be oppoſed to that which proceeds from the venereal diſeaſe. Tode removed a conſumption of

this kind, attended with ulcers of the fauces, night-pains, emaciation, ſlow fever, cough and ſpitting of blood, by means of ſublimated mercury employed after the method of Van Swieten *, and continued for two months; but during the whole of that time, he likewiſe gave internally an infuſion of bark and ſarſaparilla, and ſoup made with delicate fleſh, and prepared with the cup-moſs; and beſides theſe, milk in place of any other aliment. In the mean time he cauſed the ulcers to be cleanſed by means of a watery ſolution of the ſame corroſive ſublimate, with the addition of a proper quantity of honey †. Chriſtianopulus alſo performed a ſimilar cure by the uſe of the corroſive ſublimate, and has publiſhed the caſe in the little work concerning the diſeaſes cured by the medicine of Van Swieten. Moreover, Bourru ‡ does not heſitate to aſſert, that the *gummy mercury* of Plenck ‖ is employed with advantage in the cure of this conſumption. Others prefer the ſparing and cautious rubbing in of mercury. But when the lungs are already eaten through by an ulcer, they hardly bear the employment of mercury in any manner without injury. It is a ſafer and better plan to have recourſe to the decoctions of the woods, by means of which I have not unfrequently obſerved *phthiſis pulmonalis* removed, and the hectic fever diſcuſſed. Of theſe the chief rank is held by the decoction of Septali §. With regard to the remaining ſpecies of conſumption, originating from

morbid ſtates of the other viſcera (53.), as they require nearly the ſame treatment which is calculated for *phthiſis pulmonalis*, what has been ſaid of it conſequently applies to them alſo.

* *Van Swieten's method*, as he himſelf, in two different letters, imparted it to Joſ. Benuenutus, a phyſician of Luca, an. 1755, is as follows: "I ſet great value upon the uſe of mercury, but its adminiſtration requires great caution, eſpecially when it is employed in its crude ſtate, or rubbed in. I know that theſe trials have not turned out ſucceſsfully in the hands of every one. If the *corroſive ſublimate* of mercury be diſſolved in rectified ſpirits diſtilled from corn, in the proportion of a grain to the ounce of ſpirit, and if of this mixture a ſpoonful, or at moſt two ſpoonfuls, be given to adults morning and evening, drunk off at the ſame time in a large quantity of barley-water, or any other emollient drink, its efficacy is found to be very great in the caſe of lues venerea, and in other diſeaſes of great difficulty of cure. The remedy is continued ſo long as any of the ſymptoms of the complaint remain. It is taken ſafely even for a length of time. I adviſe the patient to abſtain from fatty matters, from ſalted or ſmoked meat, and eſpecially from bacon: I readily allow them broths, ſoft pot-herbs, and a ſmall quantity of fleſh. I give them in abundance a ptiſan of barley, with a fourth part of milk, or any emollient decoction." In place of the ſpirit diſtilled from corn I ſubſtitute diluted ſpirits of wine, and then ſweeten the ſolution with the ſyrup of violets.---*From a paper of the author's.*

† *Collect. Soc. Med. Haun.* vol. i. p. 171. ‡ *Deſcript. Hiſt. quorund. morb.* hiſt. 12. Vid. Mich. Frid. Boehm. *Diſſert. varia ſyphilidis therapia.* Argentorat. 1781. § xxi.

‖ The *pilulæ mercuriales gummoſæ* of Plenck are as follow:---Rec. mercur. vivi drach. i. gum. arab. drach. ij. Terantur invicem, addito dimid. cochlearí aquæ in mucum. Huic bene ſubacto add. extract. cicutæ drach. i. pulv. liq. q. s. m. f. pil. g. ij. Dentur n. ſex pro doſ. mane et veſperí. See *Nova et facilis methodus argentum vivum ægris venerea labe infectis exhibendi quam Vindobonæ*, ann. 1776, edidit J. S. Jac. Plenck.---*From the author's papers.*

§ Decoctum Septalii:---Rec. Rad. Sarſaparillæ minut. inciſ. unc. vj. hordei excortic. unc. iv. In fund. per hor. xxiv. in aq. calent. lib.

xv. vaſe clauſo. Deinde lento igne decoq. donec quinque lib. conſumptæ ſint. Tunc extrahatur ſarſaparilla et tundatur in mortar. marmor. mox in eandem aquam immitatur, et add. carnis vitulin, macr. lib. iij. ſem. coriand. unc. j. vel ligni ſancti raſ. tantumdem, vel ſantal. citr. drach. iij. et operto vaſe iterum decoq. lento igne, donec remaneant lib. v. et in fine aromatiſentur drach. tribus cinnam. electi. Colentur cum forti expreſſione. Dentur ſummo mane unc. vj. vel vij. quatuor horis ante cibum, veſperi autem unc. iv. vel v. ante cœnam. Aſſumatur per quam plurimos dies, quandoque uſque ad centum." Lud. Septal. *animadv. med.* l. vii. n. 214. *From the Author's papers.*

93. Laſtly, the ulcers of the larynx and trachea, or phthiſis trachealis (57.), when it ariſes from an acrid humour falling into the larynx, which very frequently happens, require that the defluxion from the mouth of the larynx ſhould be prevented, and the acrid humour corrected, in order that the ulcers may the more readily heal up. Morgagni * cauſed a patient labouring under this complaint to remain as ſilent as poſſible; to lie with his head low; to live in a large but warm chamber,—for it was the winter-time;—to avoid the wind and ſun, as Hippocrates recommends †; to ſuck milk every morning from the breaſts of a healthy woman, living on the beſt food; and to take, by way of ſupper, pottage of the *ferculum Saxoniæ*, boiled in milk without ſugar, and by theſe means reſtored him to health, contrary to all expectation. He likewiſe removed another phthiſis trachealis, which was approaching to a phthiſis pulmonalis, as it appeared to have been occaſioned and kept up by

an herpetic and ſcorbutic acrimony, in the following manner. He gave every day a little of the reſin of turpentine, by which the patient affirmed that the throat and cheſt were conſiderably relieved. After that, for the firſt twenty days,—for it was the ſummer-ſeaſon,—he cauſed the patient to drink milk-water, as it is called, in which aquatic pimpernel, ground-ivy, ſun-flowers, and a little of the bark of ſaſſafras had been macerated, the drinking of which was always repeated five hours after dinner. But, after theſe twenty days, in place of it he ſubſtituted the drinking of viper-ſoup, prepared with frogs and the tails of river-crabs, to be drunk in the morning. After the patient had begun to uſe this, itchy ſpots broke out, the colour of the face was improved, the ſtrength increaſed, the patient became leſs lean, the cough leſs frequent, the hoarſeneſs ſlighter, and the expectoration more ſcanty. The food conſiſted intirely of chickens, which were boiled, ſtuffed with the above-mentioned herbs, and of frumenty prepared from rice or oats, with almonds. The drink at table was always water very ſlightly medicated with the root of bark and the bark of ſaſſafras; and that at other times the *aqua Brandulæ*, which, during the heat of ſummer, and when the thirſt was urgent, was drunk ſomewhat more liberally. As towards the beginning of September the cough, expectoration, and emaciation ſtill continued to go on,—for after employing ſo many remedies he appeared to be thinner than he

ought to have been,—the matter expectorated, eſpecially that ſpit up in the morning, although not as formerly bloody and putrid, ſtill had not loſt its yellowiſh aſh-colour and ſaltiſh taſte. Laſtly, the cough was ſtill troubleſome in the morning and evening, and ſeemed to ariſe from a deeper ſeat than the larynx. On which account, the patient being again and again cautioned to defend himſelf againſt the inclemency of the cold weather, he had adviſed him to drink for a month aſſes milk, in conſequence of which the expectoration returned almoſt to its natural condition; then to drink cows milk, in the uſe of which he perſevered to the end of December. By which means the ſpitting, cough, and all the ſymptoms were made to diſappear, and the former vigour, colour, and habit of body, together with perfect health, were reſtored ‡. But every phthiſis trachealis and ulcer of this kind does not ſo readily yield to medicine. They generally terminate in real phthiſis pulmonalis and death, or cut off the patient by ſuffocation.

* *Epiſt. anat. med.* xxii. n. 27. † *De morb.* l. 2. ‡ Morgagn. *Epiſt.* n. 31.

94. Laſtly, I muſt ſay ſomething concerning the regimen to be adopted. The labour of the phyſician will be intirely fruſtrated, unleſs the cauſes which have given origin to the complaint, or excited it, be removed with the utmoſt care, and proper attention be paid to the regulation of the

non-naturals. In particular, the food ought to be weak, cooling, and eaſy of digeſtion. Freſh and tender pot-herbs, ripe fruits, and ſuch as are not apt to become putrid, ſoft boiled eggs, and ſmall freſh-water fiſh boiled in milk, and given ſparingly and cautiouſly, are preferable to fleſh. If the patient be allowed any animal food, it ought to be that of chickens which have been fattened with barley, rice, or Turkiſh corn boiled in milk. But every kind of fulneſs is to be avoided. Thick, glutinous, too nouriſhing articles, or taken in too great quantity, and fat ſoups; gelatinous things; farinaceous pottage, and the like, which are generally given by way of food by the common people, who have ſcarcely heard of the name of phthiſis pulmonalis, are deſervedly condemned by Van Swieten *. For in the languid ſtate of the ſtomach they cannot be well digeſted, and they afford a viſcid, ſluggiſh, glutinous kind of chyle, which, on being received into the blood, obſtructs and oppreſſes more and more the lungs themſelves, already obſtructed, or labouring under atony. I do not deny, however, that ſometimes the *ferculum Saxoniæ*, and pottage made of the flour of mace, or Saracenic corn, called by botaniſts *fagopyrum*, or even of wheat or rye †, from which pottage is prepared with water or milk, have proved of remarkable ſervice in ſome caſes of phthiſis; provided the experiments which are related be underſtood only of incipient phthiſis,

and of that which ariſes from exceſſive tenuity and acrimony of the fluids.

* *Comment.* on Boerhaave, § 1200. n. 3. & § 1208. n. 3.

† In Brunſwick a pottage is prepared with the flour of rye, pure water, and freſh butter, boiled together, which either alone, or in conjunction with milk, is taken in the morning upon an empty ſtomach, and by means of it Lange mentions, that conſumptive patients, if they be not reſtored to health, are frequently relieved. *Miſcel. verit.* faſc. i. p. 33.

95. The expreſſed juice of barley, oats, or rice, not much condenſated, is more eaſily digeſted; nor does it afford a gluten which cannot be overcome by the *vis vitæ*. Likewiſe the flour of barley, ſlightly toaſted, loſes much of the gluten by which it might prove injurious to the ſtomach and other viſcera. Gruel made of it, and boiled up in ſoup or milk, lies on the ſtomach well, and proves nouriſhing. Others employ, in place of that flour, bread crumbled down fine, and boiled in milk, with the addition of a little ſugar and wheaten flour, ſo as to afford a ſoft, pleaſant, and light food. At preſent the kind of food held in the higheſt eſtimation, eſpecially in Germany, is *ſago*. It is brought to us from the Eaſt Indies, and is ſaid to be the medulla of a particular ſort of palm-tree formed into grains. In the year 1645 Mallovin publiſhed an expreſs diſſertation at Paris concerning *ſago*, as being the beſt remedy in the cure of conſumption. In it Lange * has aſcertained the preſence of ſmooth particles, and aſſerts that the utility of theſe ap-

pears in alleviating diſeaſes of the lungs, and is evinced by frequent experience. Moreover, he obſerves that ſago is very eaſy of digeſtion, and therefore affords good and generous nouriſhment, and is almoſt altogether converted into juice and blood. He recommends boiling it in two parts of water and one of milk, into the form of pottage, and affirms that no obſtruction of the glands or viſcera is to be apprehended from its employment.

* *Miſcel. veritat.* faſc. i. p. 109.

96. To theſe ought to be added another kind of pottage, named by Clerc the *cibus albus* *, which he highly recommends. He boaſts † that a lady of quality, who in conſequence of a hemoptyſis had fallen into a confirmed conſumption, being diſguſted with the milk on which ſhe had been living, merely by employing this pottage between three and four months,—in conſequence of which itchy puſtules broke out all over her body,—was at length reſtored to health ‡. But it would be tedious to particulariſe every thing which is recommended by authors by way of food or medicine, and which may be occaſionally taken by patients with ſucceſs. Therefore, paſſing over theſe, I ſhall proceed to the remaining regulations concerning the diet. While they continue to employ milk, wine muſt be forbid. Their ſupper ought to be very light. They ought to go to bed early. They ought to avoid too much ſleep, as well as too long watching; to take

moderate exercise, and to abstain intirely from venery. A prudent choice of air and exercise must be made. For the climate in which the disease has arisen is the worst. The most temperate air should be chosen, and, if possible, that of the plains, which is preferable, because plants are said to have a surprising effect in purifying putrid air. Neither does the same degree of motion and exercise answer every patient; nor must riding on horseback, or in a carriage, as is commonly done, be prescribed upon every occasion, but only in the case of patients who labour under atony of the solids, and whose fluids abound with a crude and sluggish mucus, before the complaint has become confirmed ‖. A sea-voyage is calculated for most patients, or for those whose strength is considerably exhausted. Cicero himself §, to prevent the approach of consumption, to which he was naturally predispos'd, had recourse to a a long voyage. And the advice of the younger Pliny to his freedman, who laboured under hemoptysis, to take a voyage to Egypt, was attended with success. But why need I recur to ancient authorities, while we have such repeated instances of the success of this remedy among ourselves? I shall simply add, that patients are ordered to go to the climates where the winter-season is mildest, as those of Naples and Pisa are, in order to spend their winter.

* Clerc, *Hist. nat. de l'hom.* vol. ii. p. 33. † Raulin also has made the same remark (82.) ‡ *De clar. orat.*

|| Take the white fleſh of a capon, or of a roaſted fowl, without the ſkin or fat, half an ounce of purified ſweet almonds, four bitter almonds, ſix drachms of ſeeds of white poppy, pound all together in a marble mortar until it be reduced to a paſte, which muſt be occaſionally wet with two pints of new milk gradually poured upon it. Afterwards incloſing them in a piece of linen, let them be expreſſed, that an emulſion may be obtained, in which diſſolve half an ounce, or ſix drachms, of the flour of rice. Let this mixture be placed upon a ſlow fire, always ſtirring it about, that it may not burn, until it acquire the appearance of cream. Add as much of the ſugar of roſes, or violets, as pleaſes the patient's taſte. Then removing the veſſel from the fire, the water of orange-flowers, or of a whole citron, or other aromatic, may be added to it. Of this meſs the patient may take a proper quantity three or four times a-day.

§ See the *Phthiſiologia* of Morton; *Theatr. Tab.* of Bennet; Raulin's *Obſ. de med.*; Dupre' de Liſle, *De la phthiſ. pulmon.* &c.

CHAPTER IV.

CONCERNING INFLAMMATION OF THE LUNGS AND CHEST, AND KINDRED, OR SUCCEEDING, AFFECTIONS.

97. INFLAMMATION of the lungs is twofold; namely, *peripneumony* * and *pleuriſy*. Theſe affections, in my opinion, differ neither in their ſeat nor nature, but merely with regard to their ſymptoms. This appears to be chiefly proved by anatomy, reaſoning, and the authority of the moſt diſtinguiſhed writers. Nor am I diſpoſed to give up my opinion in conſequence of the arguments which I know others allege againſt it, or by the paſſages adduced from the ſpurious works of Hippocrates, by authors otherwiſe of the greateſt learning; as the ſame author, in his

genuine book, *De Locis in Homine* (N. 24.), has left it in writing, when both parts of the lungs are inflamed, that peripneumony takes place; but if only one part of them be inflamed, that pleuriſy ariſes.

* *Peripneumonia peripleumonia, pneumonia, pulmonia*, &c. are ſynonymous terms.

98. Peripneumony, according to the original ſenſe of the word, implies an inflammation ſurrounding the lungs. But if it be taken in a looſer ſenſe, which is commonly done now, it comprehends that inflammation of the lungs which is not attended with an acute and pungent pain; or if any pain be preſent, it is rather of a dull and heavy kind. Its principal ſymptoms are the following: Quick, warm breathing; a cough, at firſt dry, with a ſcanty and frothy expectoration; thin, crude, yellow, or ſtreaked with blood, afterwards moiſt, attended with a more copious and freer expectoration of a thicker and better digeſted matter; a ſenſe of weight, heavineſs, and diſtenſion of the præcordia and whole cheſt; no pain, or ſuch an one as has been juſt now deſcribed, and generally ſettling in the ſternum and ſpine, or only betraying itſelf when the cough ſhakes the cheſt with uncommon violence. Moreover, the cheeks ſwell and become red; they are occaſionally affected with glowing heat; the veins of the temples and neck become turgid; the eyes protuberate; the head is affected with pain; the tongue becomes parched, and is firſt tinged with

a kind of yellow colour, and afterwards overſpread with a viſcid mucus; and, laſtly, it becomes black, and ſometimes it cracks. To theſe ſymptoms are added loathing of food, and a deſire for cold drink and cold air; the pulſe for the moſt part is great, ſometimes wavy and ſoft, frequently, however, hard and violent, (notwithſtanding of the hypothetical opinion of others); ſometimes it is of the kind called *dicrotus*, or intermitting, or ſmall and quick; the patient's lying upon his back with greater eaſe, while he is ſcarcely able to lie on either ſide, on account of the danger of ſuffocation; loſs of ſtrength; the urine ſometimes thin and watery, ſometimes red and thick.

99. If the complaint be more ſevere, or become worſe, the breath is drawn with the utmoſt difficulty; the patient is diſtreſſed with conſtant watching, or a comatoſe ſleep, although of very ſhort continuance, ſteals upon him; the mind is affected; a very bloody and florid expectoration is coughed up, which is at length ſuddenly ſuppreſſed, and occaſions a bubbling noiſe internally; the extremities are cold; the lips and nails become livid; the forehead and neck are bedewed with a cold ſweat; there is a tendency to fainting; the eyes are languid, watery, and covered as it were with a film; the noſtrils become dry, and the angles of the noſe ſtretched wide; the pulſe becomes obſcure, vermicular, and for-

micating; and other deplorable ſymptoms cloſe the train.

100. In pleuriſy ſymptoms nearly ſimilar to theſe occur. For even from the days of Galen*, that complaint was ſuppoſed to be attended with a continued acute fever; difficult reſpiration; a troubleſome cough; a crude, ſometimes bloody, expectoration, or ſtreaked with blood; a hard or *ſerrated* pulſe, and not a deep or dull pain, as in peripneumony, but a more acute or frequently pungent one in ſome part of the cheſt, or in one or other ſide, ſo much aggravated by every inſpiration and ſhock occaſioned by the cough, that the patients are obliged, on account of the pain, to check their inſpiration and the cough. The pain ſometimes precedes the fever, ſometimes ſucceeds it, according as the pleuriſy is primary or ſecondary. Hence the ſymptoms peculiar to pleuriſy, by which, if it cannot be defined, it may at leaſt be deſcribed, are thus enumerated by Cullen: *Pyrexia; dolor lateris pungens; inſpiratio dolens; decubitus, plerumque in latus affectum, moleſtus; tuſſis dolentiſſima, initio ſicca, poſtea humida, ſæpe cruenta* †. A more violent pain, therefore, which is always preſent, conſtitutes the difference, if there be any, between peripneumony and pleuriſy.

* Riverius, *Prax. med.* lib. vii. cap. 3. † *Gen. morb.* ord. ii. *phlegm.* gen. 12.

101. Pleuriſy has generally been conſidered as an inflammation of the ſide or pleura ſurrounding

the ribs, in order that it might be properly diſtinguiſhed from peripneumony, which was ſuppoſed to ariſe from inflammation of the lungs. Others, however, on diſcovering from diſſection that they are both diſeaſes of the lungs *, inquiring into the cauſe of the one being attended either with no pain, or only an obſcure one, while, in the other, a moſt diſtreſſing one is preſent, thought that they had diſcovered that it proceeds from the difference of the part affected. For they ſuppoſed † that pleuriſy was ſeated in the external ſurface of the lungs, which they imagined to be more ſenſible from being covered with the pleura; while they believed that peripneumony was contained in the internal receſſes of the lungs, which they imagined to poſſeſs leſs ſenſibility on account of the want of the pleura there. But neither can the pleura be the ſeat of ſo great pain, as it has few or no nerves, nor are the lungs therefore more ſenſible in conſequence of the pleura, nor are the internal parts, which are very copiouſly provided with nerves, leſs acutely ſenſible. As therefore the diſtinction between peripneumony and pleuriſy conſiſts intirely in a greater degree of violence of the pain; I conſider it, with Sarcone, as being very probable, that in the former moſt of the leſs ſenſible parts of the lungs are affected, and more ſlowly, with the cauſe of the inflammation, but that in the latter, ſome of the parts which are endowed with more exquiſite ſenſibility, and provided with more remarkable nerves, ſuch as the inter-

nal parts, are affected; or that the nerves themſelves are more immediately and violently touched and vellicated by the inflammatory acrimony. What occaſion, therefore, is there for conceiving, as ſome ſuppoſe, that in pleuriſy the bronchial artery is more affected by the inflammation, and in peripneumony the pulmonary artery? Are the diſtributions of theſe arteries ſo diſtinct, that they proceed in their courſe ſeparately, no where communicating, or being mutually joined?

* Vid. Zecch. l. ii. *De corp. hum. ſtruct. et Append. conſult. med.* xxvi. Lindeſtolp. *De venen.* p. 314. among whom is Morgagni, together with moſt of the moderns. † The moſt inconteſtible proofs, by which it is demonſtrated that the lungs are the ſeat of pleuriſy, may be read in the works of Tiſſot, in a letter to Hirtzel, p. 28. et ſeq.

102. I do not, however, deny that the pleura ſometimes becomes red and inflamed all over, which may be proven by innumerable diſſections; but I merely contend that, on account of its poſſeſſing none, or very little, ſenſibility, it is altogether incapable of exciting ſo ſevere a pain as generally takes place in pleuriſy (98.); and that it can neither occaſion ſuch difficulty of breathing, nor ſuch a cough and copious and bloody ſpitting, unleſs the lungs, or nerves diſtributed over the poſterior cellular ſpaces, or the intercoſtal muſcles, be at the ſame time affected. For it is known, from repeated obſervations, that when the pleura alone is inflamed, neither is the pain ſo acute, nor is it aggravated on inſpiration, becauſe by inſpiration it is rather relaxed; nor is ſo frequent

and troubleſome a cough excited, nay, that it is frequently abſent *. Diſſections have even been made by eminent anatomiſts, from which it has appeared that inflammation of the pleura has taken place without the patient's having complained of any pain †. Many, both of the ancients and moderns, affirm, that this inflammation of the pleura is properly the *true pleuriſy*, on account of its exiſting in the pleura, from which they think it receives its name. They acknowledge that it is a diſeaſe of very rare occurrence, and that it does not appear ſurpriſing that, on diſſection, the pleura is rarely found to be inflamed in pleuriſy. But do all the ſymptoms characteriſtic of pleuriſy (98.) occur in this pleuriſy? Are the pain and difficulty of breathing ſo great, is the cough ſo diſtreſſing, or the ſpitting of blood ſo copious, that it may be called *actual pleuriſy*, ſuch as is deſcribed by authors (100.)?

* Zerian. *Della parapleuritide*, c. iii. p. 30. 31. † Frid. Medicus, *Collect. obſ. med.* vol. i.

103. Sometimes the mediaſtinum by itſelf becomes inflamed, and a diſeaſe ſimilar to pleuriſy ariſes. When this happens, moſt authors affirm that a pain, together with the other ſymptoms of pleuriſy (98.), attacks nearly the middle and forepart of the cheſt,—if the anterior part of the mediaſtinum, by which it is connected to the ſternum, be inflamed,—and the poſterior part,—if the backpart of the cheſt, next to the ſpine, be affected,—or both parts, if the inflammation occur in the

correſponding parts of the mediaſtinum. But Petrus Salius Diverſus *, who has inquired very attentively into the ſymptoms of this diſeaſe, remarks that during the inſpiration a ſtraitening and kind of obſtruction at the ſternum is felt, rather than pain,—which indeed is conſiſtent with the ſmall degree of ſenſibility of the mediaſtinum, —and when in fact the pain is preſent, that it is neither remarkable nor violent; but that the reſpiration is very quick, although not difficult or laborious. Moreover, he aſſerts that he has ſeen ſuch patients affected with an acute fever, accompanied with great reſtleſſneſs and thirſt, and the other ſymptoms which are the concomitants of ardent fevers; that they complain of great heat in the thorax, in conſequence of which they were both deſirous to inſpire the cold air, and expire their warm breath; that they were all diſtreſſed with a cough, generally dry at the beginning, and afterwards moiſt; that what they expectorated was either of a red or yellow colour; that the greateſt part was of a yellow colour, and little of a red; and that their pulſe was like that of pleuritic patients. And he has illuſtrated the matter by the inſtance of a particular patient, an account of whoſe diſſection he adduces; adding, that ſyncope concurred with the other ſymptoms when the inflammation of the mediaſtinum was diffuſed to the pericardium. The pericardium alſo, nay, even the heart, ſometimes becomes inflamed by itſelf. When this happens, beſides the pain and

anxiety, the patient is ſubject to frequent fainting-fits, and great heats; very acute fever; great thirſt, nay, even more ardent than in pleuriſy and in peripneumony †. The pulſe is violent, very quick, and ſometimes intermitting ‡. Nor is it a rare occurrence for the inflammation of the lungs, on account of the vicinity or connection of the parts, to be propagated to the pleura, diaphragm, mediaſtinum, pericardium, and heart; or, on the contrary, to paſs from theſe to the lungs, according to the nature of the parts affected, occaſioning excruciating pain, conſtant and violent cough, orthopnœa, delirium, convulſions, derangement of the pulſe, and the greateſt anxiety. When the complaint affects ſo many parts together, it is named by ſome *pleuro-peripneumonia* ‖; the term being employed in a more extenſive ſenſe than in its uſual acceptation (112.).

* *De affect. part.* c. vi. † *Ibid.* ‡ Riolan. *Enchirid. anat. med.* l. iii. p. 206. ‖ Haller, *Opuſc. pathol.* obſ. 13. Morgagn. *De ſed. et cauſſ. morb. epiſt. anat. med.* xx. & xxi. De Haen, *Rat. med.*

104. But although pleuriſy has many ſymptoms in common with peripneumony, in it, as I have already obſerved, an acute and lancinating pain is felt, particularly if the left ſide be affected, which ſometimes riſes upwards to the throat, ſometimes to the clavicle, ſometimes to the ſhoulder-blade, ſometimes deſcends downwards to the præcordia or hypochondria, and ſometimes is fixed in both ſides. At times it is felt only

when the patient, while lying on the right or left ſide, is deſired to make a full inſpiration, or to cough. For as inſpiring and coughing increaſe it when preſent, they excite and call it forth when latent. When this happens, the pleuriſy is named *occult*. According to Hippocrates, the cauſe why the pain is perceived in various places, or propagated thither, is explained in the *Coacæ Prænotiones*, as follows: "When a pain is felt at one clavicle, one of the upper lobes of the lungs is affected; but when it extends to both, both ſuperior lobes are in like manner affected: when the pain is felt in the middle of the rib, the middle of the lungs is diſeaſed: when the pain paſſes to any part of the lungs, the lower lobe is affected: when one whole lobe is inflamed, all the parts correſponding with it become affected." (N. 400. and elſewhere).

105. When the acceſſion of the fever takes place, which is frequently preceded by ſhivering and cold, and ſucceeded by heat and thirſt, the patient is ſometimes diſtreſſed with vomiting, or a deſire to vomit, and the urine is firſt voided thin and copious, although it afterwards becomes ſcanty and red. The reſpiration is frequent and ſmall, nay, difficult, but not always ſo, as in peripneumony. It is likewiſe generally inconvenient to lie upon the ſound ſide; for the inſpiration is then rendered more difficult, the cough and anxiety increaſe, and the pain alſo frequently re-

turns, which is eaſily explained. For the lungs being inflamed, become ſwelled and diſtended, and, on account of the congeſtion, are rendered more ſolid and heavy. If the patient lie upon the ſound ſide, the mediaſtinum preſſing upon the lungs ſtraitens and irritates them in ſuch a manner, that they become leſs capable of ſerving the office of reſpiration. Hence the blood paſſes through them with greater difficulty, in conſequence of which the cough and anxiety are increaſed. But when the pain at the ſame time is increaſed in this poſture, it probably happens in conſequence of ſome adheſion of the lungs to the pleura; for while the patient reclines upon the ſound ſide, the lungs, where they adhere to the pleura, being torn by their own weight, muſt neceſſarily become more painful, and the more ſo, if the pleura and intercoſtal muſcles, with which they have become united, be at the ſame time in a ſtate of inflammation. The pulſe, as I have already remarked, for the moſt part is hard and ſerrated; ſometimes great and violent; ſometimes ſmall and irregular; at other times, likewiſe, ſoft, wavering, and having the double ſtroke.

106. At the beginning of the complaint, either nothing, or only thin phlegm, or ſome thick tenacious matter, is expectorated, although it is for the moſt part ſtreaked with blood. As the diſeaſe advances, the expectoration comes off more eaſily and copiouſly, and, from being thin, begins

to become thicker, and changes its bloody for a whiter colour. At the height of the complaint, which is named *ſtatus*, it is concocted, white, ſmooth, and affords relief. When the complaint takes a turn, the pain, fever, cough, and difficulty of breathing diſappear, ſymptoms of concoction being diſcoverable in all the excretions. If, however, notwithſtanding the efforts of nature, and the remedies employed, the inflammation increaſe and ſpread wider over the lungs; or if it be tranſlated from the pleura and ſide of the thorax, where it was firſt ſeated, to the lungs, the pleuriſy is then ſaid to paſs into peripneumony. For, in conſequence of the lungs being oppreſſed with the inflammatory gluten, for the moſt part not only does the pain, in conſequence of the ſenſibility being overwhelmed and blunted, remit, and the reſpiration become ſhort, high, and can only be performed in the erect poſture, while the cheſt is oppreſſed, and a bubbling noiſe is emitted from it; but likewiſe the blood being forced to ſtagnate in the right ventricle and auricle of the heart, as well as in the trunk of the vena cava, oppoſes an obſtacle to that which is flowing back from every part of the cheſt. Being forced by the action of the heart into the pulmonary veſſels, which are thus oppreſſed, it diſtends them, expreſſes the mucous gluten from the lateral veſſels, obſtructing and filling all the parts; in conſequence of which the air veſicles being compreſſed,

can neither be dilated, nor promote the circulation through the lungs. Hence, the circulation of the blood being interrupted, ſuffocation and death follow, before ſuppuration or gangrene come on. Moreover, in ſo great anxiety of the breaſt, and interruption of the paſſages, the mucous fluid paſſes out in all directions from the exhalant veſſels, without being taken up by the abſorbents, which are already quite full, in conſequence of which it happens, that being collected about the lungs, mediaſtinum, pleura, pericardium, and heart, when the body becomes cold it coagulates and exhibits itſelf to the diſſector under the appearance of a puriform mucus, with which theſe parts are more or leſs covered. Nay, ſometimes, on account of the circulation of the blood being thus retarded, and, as it were, checked, its ſerous part ſeparating from the reſt, exudes into the cavity of the thorax, ſuperadding hydrothorax to peripneumony,—which is named *hydro-pneumony*,—and the affected organs being at length preſſed on in every direction, it deprives the patient of breath and life. When this affection happens, the urine flows more ſparingly, or is ſuppreſſed; unexpected anxiety ſupervenes, and ſuch difficulty of breathing as cuts off the patient in a few hours. With regard to the blood which is drawn, both in pleuriſy and peripneumony, on cooling it coagulates into a hard, coherent maſs, ſurrounded with a ſmall quantity of ſerum. Generally, if not on the firſt bleeding, at any rate after the ſecond or third,

a whitiſh mucous cruſt appears upon the ſurface, which is named the *inflammatory cruſt*, ſometimes ſo firm, compact, and concrete, that it can ſcarcely be divided or penetrated, and appears in the middle hollow, and bent upwards and retracted at its circumference. Sometimes it is not white, but yellow and greeniſh; ſometimes it is of a ſcarlet colour, or of an intermediate colour between white and ſcarlet. Likewiſe the cheeks are marked with a roſy ſpot, and much more frequently upon the ſide correſponding with the inflamed ſide of the lungs. Nor muſt the examination of the tongue be neglected; for, beſides the dryneſs and thirſt which uſually attend acute diſeaſes, its whiteneſs and roughneſs claim attention. Moreover, in the Aphoriſms of Hippocrates it has been obſerved: "In inflammation of the lungs, if the tongue become all over white and rough, both parts of the lungs are inflamed; but when one half of it only is ſo, it correſponds with the inflamed part of the lungs." *Coac.* N. 400.

* Storck, Monro, Scholinger, and Zimmerman, (Vol. II. p. 31.), mention that hydrothorax frequently ſupervenes on peripneumony, and the latter upon the former.

107. The cauſes which give riſe to both complaints (97.) are the ſame which I have elſewhere enumerated, and from which other inflammations ariſe; but eſpecially violent exerciſe of the body, cheſt, and lungs, particularly in cold, hot, or windy weather; the taking of very cold drink

when the body is warm; ſudden changes from hot to cold weather; ſevere catarrhs and rheumaiſm being neglected; the winter and ſpring ſeaſon *; the inhaling, or ſwallowing, of a poiſonous, cauſtic, aſtringent, coagulating, or any unknown acrid principle, miaſma, vapour, or halitus; tranſlations of morbific matter; preceding diſeaſes of the cheſt, both acute and chronic; phthiſis; aſthma; hydrothorax; keeping in the breath too long; a mal-conformation of the cheſt and lungs; and, laſtly, a peculiar diatheſis of the blood, named *inflammatory*; although this laſt ſometimes may not be the cauſe, but effect of inflammation.

* It is proven by a variety of facts, that the vernal and winter complaints differ much from one another. See *Com. de reb. in ſcien. nat. et med. geſt.* vol. vii. P. i. p. 155.

108. The peripneumony and pleuriſy which have been hitherto deſcribed are named *true*, *exquiſite*, and *genuine*. But there are likewiſe ſpurious ſpecies of the complaint, which are ſo named becauſe neither in violence, nor in the variety of the ſymptoms, do they equal the ſeverity of the former. Sometimes a thick and acrid humour, or thin and acrid lymph, paſſes in abundance into the lungs, and, like a catarrh, excites preternatural heat and fever. In ſuch a caſe the patient is exhauſted with a cough, difficulty of breathing, and ſlow fever, without bloody ſpitting, or an abſceſs, or ulcer of the lungs. Nicolaus Piſo, with moſt of the ancients, makes mention of the *peripneumonia ſpuria*, which clearly differs from

the *exquiſite*, or *true peripneumony*, both with regard to its cauſe, and the mildneſs of the ſymptoms. *De Cog. et Cur. Morb.*

109. There is another ſpecies of ſpurious peripneumony, which, with Riverius * and Sennert †, we may name *pituitous*, becauſe it ſeems to ariſe from thick, viſcid, and ſluggiſh phlegm, paſſing into the lungs, and obſtructing them. It generally attacks old people, in the ſpring ſeaſon, of a cold phlegmatic habit, addicted to the uſe of wine, and living in marſhy ſituations, eſpecially thoſe of a cachectic diſpoſition, who during the winter time do not perſpire ſufficiently. It begins with a catarrhal cough, which, however, is not conſtantly preſent, hoarſeneſs, cold and heat alternating with each other, with manifeſt fever, but ſlighter in degree than it generally is in actual peripneumony. Oppreſſion at the cheſt; weight; a dull and heavy pain; white, viſcid, frothy expectoration, rarely ſtreaked with blood; a ſoft, and not very frequent pulſe, often ſmall and weak; ſlight thirſt; and the tongue being covered with a white mucus, are its remaining ſymptoms; to which, for the moſt part, is added, comatoſe ſleep. I believe that it was obſerved by Sydenham ‡, and carefully deſcribed by him, under the name of *peripneumonia notha*. But he remarks, that in it the patient is likewiſe diſtreſſed with vertigo; that his head, when he coughs, ſeems to be ſplit aſunder; that he is diſtreſſed

with pains all over his cheſt; that every thing which is drunk is rejected by vomiting; and that the blood, when drawn from a vein, is covered with the pleuritic coat. The name of *peripneumonia notha* is likewiſe given by Boerhaave to that oppreſſion of the lungs which generally takes place at the termination of diſeaſes, and is commonly the forerunner of death. But Lieutaud ‖ rejects this diſeaſe of Sydenham as uncertain and doubtful; nor does he ſubſcribe to the opinion of Boerhaave, having been at times diſpoſed to ſpare no one.

* *Prax. med.* cent. i. obſ. 98. † *Pract.* l. ii. P. ii. c. 16.
‡ *Obſ. circa morb. acut. hiſt.* ſect. 6. c. 4. ‖ *Synops.* vol. i.

110. Thoſe who aſſert that pleuriſy conſiſts in an inflammation of the pleura and ſide (101.), derive the genuine complaint from the pleura and internal intercoſtal muſcles being inflamed *; and conſider that ſpecies as *ſpurious* which depends upon inflammation of the external intercoſtals. But ſuch is the vicinity and connection of theſe parts, that they can ſcarcely be inflamed ſeparately, or, if that ever happen, the diſeaſe of each cannot be readily diſtinguiſhed. We ſhall therefore give the name of *baſtard pleuriſy* to that inflammation which affects the ſide itſelf, eſpecially the intercoſtal muſcles and their ſheaths; nor is it of much conſequence to inquire whether at the ſame time the pleura be affected, which is probable, and ſometimes happens. For the genuine pleuriſy (98. to 108.) differs very widely from this ſpu-

rious one, becauſe in the latter the pain is increaſed on preſſure; the patient cannot lie upon the ſide affected, on account of the aggravation of the pain, reclining more conveniently upon the ſound ſide; ſometimes the external parts ſwell, become painful, and not unfrequently likewiſe exhibit ſome degree of redneſs. The fever and difficulty of breathing are leſs violent than in the genuine ſpecies of the complaint; nor is the pulſe ſo hard and *ſerrated*. There is generally either no cough, or a ſlight and dry one, unleſs the complaint be combined with a taint of the lungs. Nay, Zeuiani affirms † that the cough and expectoration are abſent in the pleuriſy affecting the pleura, which I myſelf have more than once obſerved.

* The chief of theſe are, Riverius, Lommius, Nicolaus Piſo, and Sennert. † L. c.

111. According to ſome, likewiſe, the baſtard pleuriſy is a rheumatic pain of the ſide, generally preceded by ſhooting pains of other parts, as of the neck and ſhoulder-blades, and either no fever is preſent, or only a ſlight one of the lymphatic kind. This pain, on preſſure, or making a full inſpiration, and by the motions of the body, is made to return, and is aggravated, but does not excite a cough, unleſs a catarrhal complaint be combined with the cough; or occaſions a dry one only, unattended with a ſpitting of blood. Of this kind are, the ſcorbutic, venereal, hypochondriacal, or flatulent pains of the ſide, fixed

under the falſe ribs, which are unattended with fever, and are often ſhooting, and not to be referred to a fixed ſeat. To this place alſo belongs that affection of the ſide, or baſtard pleuriſy, which ariſes from crudities in the *primæ viæ*, from thick and pituitous food, from muſhrooms, bulbi, and ſimilar things, which irritate the ſtomach and inteſtines, and affect the ſuperior parts by conſent *. Under this head likewiſe comes the pleuriſy occaſioned by worms, which affects the hypochondres lower down, and extends by ſympathy to the cheſt, and ſometimes to the lungs. Some authors give the name of *ſpurious pleuriſy* to every pain affecting the falſe ribs; becauſe neither the pleura nor lungs reach to them.

* This is the *pleuritis notha* of Platner, Lieutaud, and others. See Nic. Piſo, *De cog. et cur. morb.* l. ii. p. 86.

112. It may alſo happen that pleuriſy (110. 111.) may be conjoined with peripneumony itſelf, both from the beginning and in the progreſs of the complaint, giving riſe to the diſeaſe which Baroni * has expreſsly named *pleuro-peripneumonia*. Moreover, pleuriſy, on account of the part affected with the pain, is divided into *aſcending* and *deſcending* †, as alſo into *poſterior*, or *dorſal* ‡, and *anterior*. Hippocrates ‖ alſo propoſes making another diviſion of the complaint into *dry* and *moiſt*. Pleuriſy, likewiſe, in the ſame manner as peripneumony, is either *primary*, or *ſecondary*, or *ſymptomatic*. Among the ſecondary, or ſymptomatic, ſpecies, the chief are, the putrid, bilious §,

gaſtric, arthritic, phthiſical, exanthematic ¶, the miliary, variolous, morbillous, ardent, convulſive, catarrhal **, periodical, metaſtatic, hydrothoracic, lacteal, lochial, and the like. Of theſe, however, although the ſpecies called *bilious* is generally ſecondary and ſymptomatic, ſometimes it is primary and commences with fever itſelf. A deſcription of ſuch an one may be read in Guidetti ††, who remarks, that in theſe bilious pleuriſies there were ſhooting pains; dry and troubleſome cough, attended with a ſcanty ſerous expectoration, or a yellowiſh, bloody, and frothy one, brought off with the greateſt difficulty by the effort of coughing violently; a very quick pulſe; intenſe heat; fluſhed cheeks; great anxiety; troubleſome thirſt; conſtant watching and toſſing. The blood, when drawn once or twice, remained of a beautiful red, and the patients, after the bleeding, became worſe. They died on the fifth day. When bleeding was not employed, they were carried off on the ſeventh, ninth, or eleventh day. Vomiting alone proved ſerviceable. A cold winter had preceded, and was ſucceeded by a warm ſpring. The author quoted is of opinion that they were of an eryſipelatous nature ‡‡.

* *De pleuro-peripneumonia, &c.* Huxham on *Fevers, &c.* p. 305. Deplaigne, *Rec. de obſerv. de med. &c. Juill.* 1757. vol. vii. p. 168.
† Hippocr. ii. *Acutor.* ‡ *Id.* iii. *De morb.* || *Id.* i. *Acutor.*
§ Concerning *bilious pleuriſy and peripneumony*, ſee Tiſſot's *Letter* to Zimmerman; Morgagni, *De ſed. et cauſſ. morb.*; Manetti, *Conſulto con annotaz. e giun.*; Ang. Galli, *Adverſ. med.*; Dall'Armi, *Sag. di med. prat.*; Targioni, *Gazet. ſalut.* n. 12. 13. 14. &c. an. 1783; be-

ſides Baglivi, Lanciſi, Sydenham, Guidetti, and many other authors. ¶ Concerning the *ſecondary exanthematic pleuriſies*, the author treats in the proper place. See Concerning the Morbillous and Variolous, Vol. III. par. 249. 254. 276. and likewiſe Concerning the Miliary Species in the ſame volume, par. 403. 405. 408. All which remarks may be transferred to this place, as applying to the *primary* complaint. *Germ. Editor.* ** See Vol. I. Of Fevers, par. 346. 356. and elſewhere, where he treats of Intermittents in the ſame volume. †† *De pleurit. bilioſ. differt.* ii. ‡‡ *Id. ib.* See alſo Deplaigne, l. c. by whom both the ſymptoms and treatment of the diſeaſe are deſcribed.

113. Some of them alſo may be named *benign*, others *malignant*, according as they are attended with ſymptoms of malignity or not. To the malignant ſpecies belongs a kind of peripneumony, which, on account of its rapid tendency to gangrene, is named *gangrenous* *. It is generally epidemic, ſometimes attacking only one ſet of people, or prevailing in one place, or family, or monaſtery, and very frequently proving fatal. It appears to ariſe from a poiſonous or putrid miaſma, or from a cauſtic and acrid principle inhaled into the lungs, and adhering to them, or firſt infuſed into the blood, and afterwards thrown into motion by the fever, and carried to the lungs, depriving them very quickly of their ſenſibility and irritability. Frequently ſo hoſtile and putrid a principle is given out by corrupted bile, or from the *primæ viæ*. But it is generally then a ſymptom of the *gaſtric*, or *bilious*, fever. The patients, when ſeized with it, complain of an immenſe weight at the cheſt; breathe with the greateſt difficulty; cough; generally ſpit out nothing, or only bilious, pure,

very thin, frothy unconcocted matter, ſometimes alſo blackiſh ſanies. Some of them have ſcarcely any cough, but ſigh in order in ſome meaſure to relieve the anxiety and weight with which the breaſt is ppr eſſed, having a great degree of deſpondency marked in their face and eyes. The lungs then, on account of the ſenſibility and irritability being now deſtroyed, ſeem to become almoſt lifeleſs. The pulſe is at firſt ſtrong, but in a ſhort time becomes weak, languid, rare, and irregular. Sometimes a malignant exanthematous eruption, and violet-coloured petechiæ, ſupervene. And the ſymptom, which is common to all malignant diſeaſes, namely, the loſs of ſtrength, is preſent in this alſo.

* See Galen, Barthollet, Triller, Huxham on *fevers*, *pleuriſies*, and *peripneumony*, and his *Obſerv. de aere*, vol. iv. *Jan. Feb. Mar.* 1746. See alſo *Sag. di med. prat. di* P. P. Dall' Armi, P. iii. p. 235. to 241.

114. The blood, when firſt drawn, appears of a ſcarlet colour, and tenacious of its ſerum, but ſoft, delicate, and not coherent. When drawn a ſecond time, it exhibits a livid craſſamentum, very lax, ſurrounded with a great quantity of yellow, turbid, or greeniſh, or reddiſh ſerum; but when drawn at that time the craſſamentum is almoſt black, ſanious, and diſſolved. If diſcovered with any inflammatory coat, it is yellow and mucous, and very ſlowly coagulates. This is generally the caſe. But I have obſerved more

than once, in ſome ſuch malignant and gangrenous peripneumonies, the blood covered with a very thick buffy coat, perhaps becauſe the poiſonous miaſma had not yet corrupted the texture of the blood. Nor does it uniformly happen that the ſtrength at the beginning is reduced, as in other malignant diſeaſes; for frequently before the diſeaſe, and at its commencement, it is ſufficiently good, although in the progreſs of the complaint, when gangrene takes place, it then ſinks, as is natural to ſuppoſe.

115. We are informed by Hippocrates *, and ſince his time by Ballonius, Baglivi, and not a few others †, that the lungs are ſometimes attacked with *eryſipelas*. Lieutaud denies the poſſibility of this, becauſe eryſipelas appears to be a diſeaſe of the ſkin only, not of the internal parts. But his authority ought not to weigh ſo much with us as to make us with-hold our belief from other celebrated writers ‡. For I myſelf know that there are eryſipelatous pleuriſies and peripneumonies, generally *dry*, which, as Ballonius ſays ‖, are occaſioned by an acrid, ſubtile, malignant ſerum, incapable of concoction, or of being diſcharged, and exciting rather a wavering phlogoſis than fixed inflammation, by which the lungs are ſuddenly overpowered, as it were. The preſence of the diſeaſe is denoted by fluſhing of the face; a dry cough; great dryneſs of the tongue; burning heat of the internal viſcera; conſtant anxiety and reſtleſſneſs; ſudden loſs of

ſtrength; and ſlight pain. But Hippocrates § adds, acute pungent pains, which ſhoot ſometimes to the ſpine of the back, ſometimes to the ſternum, but wavering and tranſitory, ſuch as I myſelf have frequently obſerved. Beſides, Gorter ¶, in addition to theſe, mentions a quick, though not very hard pulſe, fiery-coloured urine, the complaint's being eaſily tranſlated, and the abſence of the inflammatory coat in the blood when drawn. Diſſection diſcovers the lungs to be very red, or black and gangrenous; but ſoft and flaccid, not hard, and overloaded, as in real pleuriſy and peripneumony. Nor is it uncommon for the fever to be very ardent, the pulſe violent and very quick, and the breath very warm; and for theſe ſymptoms to remit nothing of their violence, even after ſeveral times drawing blood, which is generally very red and frothy. Thoſe who are attacked with this diſeaſe are carried off in a very ſhort time, nay, expire quite ſuddenly, as we are informed by Baglivi **; which indeed is confirmed by my own experience. Can this be a variety of the *gangrenous peripneumony* (93.)? Several authors, among whom is Sauvages ††, confound the preſent complaint with the bilious pleuriſies, which are frequently *gaſtric* and *ſymptomatic*. Guidetti ‡‡ is likewiſe of opinion that they were bilious eryſipelatous affections.

* *De intern. affect.* n. 8. † Schenck makes mention of the eryſipelatous peripneumony. ‡ Morgagni (*De ſed. et cauſſ. morb.*

epiſt. xx. n. 12.) does not deny that inflammation of the lungs ſometimes conſiſts in a *fleeting redneſs*, that is, when it is of the nature of *genuine eryſipelas*. De Haen alſo (P. ix. c. iv. p. 125.) ſupports the ſame opinion, as he obſerved the lower lobes of the brain inflamed, but not indurated, as in other peripneumonies, or pleuriſies. ‖ *Epid.* i. p. 83. & iii. p. 20. § L. c. ¶ *Prax. med.* ** *Append. de pleurit.* †† *Noſol.* vol. i. p. 466. ‡‡ *Diſſert.* ii.

THE PROGNOSIS.

116. PERIPNEUMONY is always attended with more danger than pain, and almoſt certainly proves fatal, when, to the greateſt difficulty of breathing, delirium alſo is added, or when it ariſes from angina, or ſupervenes on ſome acute diſeaſe; for it either proves fatal within ſeven days, or terminates in abſceſs and conſumption. Sometimes in a ſevere caſe, if blood be diſcharged copiouſly from the noſe, and copious, bilious, and frothy ſtools take place, there is ſome reaſon to hope for a recovery; otherwiſe, upon the *fourth* day, or upon the *ſeventh* at fartheſt, it terminates in death. It is a bad ſymptom when phrenitis *, or convulſions †, or a diarrhœa ‡, which check the expectoration, ſupervene; or when the patient wiſhes to recline ‖, or the urine is quickly paſſed after drinking §, or when that which at firſt was concocted after the fourth day comes off thin ¶. Frequently, when the inflammation is ſlight, and does not ſpread widely, it is reſolved merely by a copious, eaſy expectoration, ſlightly ſtreaked with filaments of

blood; ſometimes by urine depoſiting a copious ſediment; not unfrequently merely by perſpiration; leſs frequently by a mucous diarrhœa mixed with ſtreaks of blood; or by a bilious one. It moſt frequently, however, happens that, when the inflammatory congeſtion is reſolved, ſome part makes a paſſage for itſelf into the bronchiæ, in order that it may be expelled by expectoration, while another part, paſſing into the veins, and circulating through them, applies itſelf to the various excretories, that it may be excreted. The kidneys receive it, and excrete it in thick, turbid, and copious urine, which depoſits a red and lateritious ſediment. The reſolution of this inflammation is generally preceded by deep-coloured turbid urine, which, upon cooling, depoſits a white mucous matter adhering to the ſides of the glaſs, and exhibits a cuticle upon the ſurface of the ſame nature, forming a circle, as it were, which adheres to the veſſel. Nor is it a rare occurrence for peripneumony and pleuriſy, on the fourth or ſeventh day, or ſomewhat later, to be critically reſolved by miliary puſtules breaking out **; which I myſelf have more than once obſerved.

* Aph. 12. ſect. 7. † L. c. ‡ Aph. 16. ſect. 6. || *Coac. Prænot.* n. 497. § *Ib.* n. 579. ¶ *Ib.* n. 415. 580. ** See *Sagg. di med. prat. di* Pietro Paol. Dall' Armi, P. ii. *Giunta all' oſſervaz.* xxxi. Le Roy obſerved a pleuriſy, attended with a ſpitting of blood, difficulty of lying upon the ſound ſide, and frequent and copious, though not fetid ſweats, critically reſolved upon the fifth

day, by a copious eruption of red, itchy, miliary puſtules (*Melan. de phyſ. et de med. prem. &c.* p. 209.).

117. The beſt kind of expectoration is that which is white, ſmooth, and inodorous; which becomes ripe upon the fourth day *, and aſſumes a white or citron colour, being diſcharged readily and copiouſly. If it appear upon the third day, it indicates a diſeaſe of ſhort continuance; if later, one of long continuance. Nor ought we to be alarmed at the beginning of the diſeaſe by the matter expectorated being of a dark-brown colour, and tinged with blood, providing it be diſcharged eaſily, relieving the reſpiration, and being accompanied with a milder degree of fever. That which does not become concocted upon the ſeventh day is almoſt a fatal ſymptom, or at any rate renders the iſſue doubtful. When it is liquid, and like ſaliva, it denotes duration of the diſeaſe; that which is frothy, viſcid, or watery, is unfavourable, on account of being uſeleſs; it is ſtill worſe if it be purely bloody. Liquid, green, black, or putrid matter, generally denotes the approach of gangrene, and death †.

* Concocted expectoration is like pus, not clear nor viſcid, nor too yellow nor too bloody, nor green nor livid, as Hippocrates obſerves. † *De vic. acut.* § iv. See *Coac. Prænot.* n. 13. to 17.

118. A bilious tongue, if it appear ſo at the beginning of the diſeaſe, portends that the complaint will terminate in ſeven days; but if it take place upon the third or fourth day, it denotes that it will hold on for nine days. Thoſe patients

in whom the pains at the beginning are ſlight, and are increaſed upon the fifth or ſixth day, generally live to the twelfth, and ſeldom ſurvive; they run the chief riſk upon the ſeventh and twelfth day. But if they ſurvive the fourteenth, they recover. Thoſe patients likewiſe recover in whom a pain and abſceſs ariſes in the internal part of the ear, giving riſe to a diſcharge of pus, as Baglivi obſerves. It is likewiſe generally a good ſymptom, if, on blood being diſcharged, the viſcera be relieved, although it ſhould return again. For there is reaſon to hope that it will yield to repeated bleeding.

119. The *dry pleuriſies* generally threaten certain death, unleſs a flow of urine ſupervenes. Thoſe ſpecies, alſo, which proceed upwards or backwards are alarming, unleſs they be ſpurious, and ſeated in the external muſcles (109. 110.). The pleuriſies which are not concocted in fourteen days * frequently undergo ſuppuration, if they do not ſuffocate the patient. But the followers of Hippocrates † extend this time to twenty-two days, during which, if they be not concocted, ſuppuration is threatened. In advanced life, and during pregnancy, they are generally fatal, or occaſion abortion; nor do they cauſe leſs danger when they return, or when the patients have laboured ſeveral times under the ſame diſeaſe; although patients ſometimes recover from theſe alſo.

* Hippocr. ſect. v. ph. 8. † Lib. i. *De morb.* n. 24.

120. Nor is it ſafe when the pain diſappears before the fever. For, upon its ceaſing, if the fever ſtill continue, and do not depend upon any other cauſe, or, which is worſe, be occaſionally aggravated, and other parts begin to be affected with new and ſevere ſymptoms, one of two things muſt happen, either *ſuppuration*, where the pain is ſituated, or a dangerous tranſlation to theſe parts. But if the pulſe become ſmall, frequent, and intermitting, attended with a cold ſweat, and if, twelve hours afterwards, delirium follow, it is evident that the inflammation has terminated in gangrene. Laſtly, if the fever, which ſtill continues, has paroxyſms, accompanied with ſhivering, or if it generally return in the evening, and the pain, particularly during the acceſſions, ſhould occaſionally ſubſide, *ſuppuration* may be certainly ſuſpected, the preſence of which may be pronounced with ſtill greater certainty, if to theſe ſymptoms be added a ſenſe of ſuffocation, and if the fever be of long ſtanding, while a ſweetiſh taſte is perceived in the matter expectorated.

121. Hippocrates has pronounced the converſion of pleuriſy into peripneumony, as being bad, and with good reaſon (aph. 11. ſect. 2.); for it indicates that the inflammation is more extenſively diffuſed over the lungs. When this takes place, the cellular texture, by which the veſicles of the lungs are connected, and the minute veſſels of them are ſo filled with a tenacious and polypous

inflammatory gluten, that the ſpaces and veſicles for containing the air being compreſſed can no longer admit the air in inſpiration; whence it happens, that, not only becauſe the lungs cannot be expanded, the blood cannot be tranſmitted through the minute arteries, and therefore increaſes the infarction of the lungs, but alſo, in conſequence of the nerves every where being diſtracted, lacerated, or compreſſed, as it were, all ſenſe of pain is obliterated, and ſucceeded by a fatal anxiety. And, in fact, the lungs, from being flaccid and ſoft, become hard and compact, completely reſembling the ſubſtance of the liver; as diſſection proves. Likewiſe, if a diſcharge of blood from the noſtrils take place ſparingly, it is bad; if too copiouſly, it exhauſts the ſtrength. Laſtly, it is the worſt poſſible ſymptom, if a great collection of matter occaſion a ſound in the lungs, if the patient's face aſſume a ſorrowful appearance, and the eyes become ſuffuſed with a yellow colour.

122. But although the pulſe, which, as I have already remarked, may vary, be ſtrong and regular, we muſt not raſhly truſt to it; for it may give falſe hopes to the laſt moment, and after all ſuddenly fall. Sometimes, however, from being hard, irregular, and ſmall, it becomes ſoft, regular, and great, like that which is named *critical*. In the mean time, the difficulty of breathing increaſing more and more, the patient, even while

ſpeaking, or endeavouring to ſhift his poſture, ſuddenly breathes his laſt. It is proper, therefore, to attend to the reſpiration more than to the other ſymptoms. The eaſier it is, the more favourable event does it portend; and *vice verſa*.

123. It is likewiſe conſidered as a fatal ſymptom by Baglivi, Lanciſi, and Boerhaave, if the blood which is drawn be florid, and without the white or pleuritic coat; for they think that the thick, tenacious, concreſcible matter, which ought to have been thrown off, remains in the lungs, and aggravates the complaint. But, ſo far as I can judge, the abſence of this coat does not always portend a worſe event, as it frequently at length appears on the ſecond, third, or fourth bleeding, and becauſe there are many things, as Sydenham and De Haën chiefly have ſhewn, which may prevent the appearance of the inflammatory gluten. Nor, when danger is threatened, in conſequence of its abſence, ought it perhaps to be aſcribed to its being retained; for, from a thin acrid fluid, which is therefore diſpoſed to diſſolution, an inflammation, like an eryſipelas, affects the lungs, and quickly induces mortification.

124. Likewiſe, many of theſe prognoſtics may be applied to the different and manifold complications of ſuch complaints, with this difference only, that if ſimple peripneumonies and pleuriſies be attended with great danger, the greater will that be attending the pleuro-

peripneumony, in whatever acceptation the word be taken (103. 112.), or thoſe inflammations which attack both ſides of the lungs. The ſame thing may be ſaid of the inflammations of the *mediaſtinum* and *pericardium* (103.). For both of them are liable to the ſame changes, but are deprived of the benefit of the expectoration. The latter, alſo, on account of its vicinity to, and complication with, the heart, is much more dangerous.

THE CURE.

125. WITH regard to the cure, each of the ſpecies require nearly the ſame as that of peripneumony (98.), and pleuriſy (100. et ſeq.). And, as it depends upon the ſame indications which belong to every inflammation *, at the very beginning copious bleeding muſt be ordered, and, after a ſhort interval of a few hours, it is to be repeated, until the hardneſs and impetus of the pulſe, and violence of the inflammatory ſymptoms abate, ſucceeded by thoſe of reſolution and concoction (105.). It is a proof that the inflammation has abated, when the pain is greatly diminiſhed; when the reſpiration becomes freer; the cough milder; when the pulſe returns to its former ſoftneſs; when it becomes more uniform and ſlower; while the fever abates, the expectoration is diſcharged more eaſily, and turbid urine is voided, or the whole ſkin is bedewed with

ſweat. Blood muſt therefore be drawn quickly and liberally, eſpecially in pleuriſy, which is ſuppoſed to require and bear more copious bleeding than peripneumony, providing the patient's ſtrength, age, temperament, and habit, as well as the ſeaſon and weather, do not contra-indicate it. Experienced practitioners do not heſitate to draw blood, at the firſt bleeding to the extent of twelve, fifteen, or even twenty ounces; nay, ſome, after a ſhort interval, permit the ſame quantity to flow from the ſame opening †, and affirm, that in this manner the diſeaſe is cut ſhort at the beginning. However, the ſtrength of the patient muſt be principally kept in view, as being neceſſary for the concoction and excretion of the matter, which ought to take place generally at the height of the diſeaſe, and after its turn, by the expectoration. It is better to let blood near the part affected, or from the ſide which correſponds to the pain, as more certain and ready revulſion is the conſequence, according to the obſervation of almoſt all phyſicians ‡; and it may be repeated as long as the ſeverity of the pain, difficulty of breathing, and hardneſs of the pulſe, ſeem to require.

* See *Commentary on Inflammation*, Vol. I. † Sims, *Epid. dis.*

‡ Although blood drawn from the affected ſide commonly proves more ſerviceable, this does not happen ſo uniformly as ſome ſuppoſe. For Rozier remarks, that Geſner, in a ſpecies of epidemic and malignant pleuriſy, found bleeding from the arm uſeleſs, while from the foot it proved of the higheſt ſervice.

126. But if the congeſtion of the lungs appear to be ſo great, that not only the inſpiration is much affected, but alſo the return of the blood from the head retarded, in conſequence of which the jugular veins become turgid, the face livid and red, and an inexpreſſible anxiety, accompanied with an obſcure pulſe and delirium, comes on, there is not a more efficacious remedy than opening one of the jugular veins. This very quickly relieves the head, and produces revulſion * from the lungs, by emptying the vena azygos, and conſequently the bronchial vein.

* Moſt authors contend, that no revulſion can take place in diſeaſes of the cheſt; but they are deceived, for the bronchial artery ariſes either from the aorta under its arch, or from the firſt of the inferior intercoſtals, or from the ſuperior intercoſtals. The blood which flows back by the bronchial vein and intercoſtal veins, is carried to the vena azygos. But when the axillary and bronchial veins, in conſequence of opening the vena baſilica, are emptied, the blood is derived in greater abundance into the correſponding arteries. Hence leſs flows into the intercoſtal arteries, and conſequently into the bronchial one. Thus the revulſion from the lungs, which is denied by ſome, takes place. But likewiſe the vena cava, becoming ſomewhat leſs full, gives room to the vena azygos, into which it may ſooner empty itſelf, and cauſes it to receive from the arteries which end in it a greater quantity of blood. In this manner both the lungs and thorax, when inflamed, may be relieved by opening a vein in the arm or neck. Laſtly, the bronchial artery communicates every where with the ſmall branches of the pulmonary artery. A revulſion muſt therefore neceſſarily take place from them alſo. Placentini, in his book concerning the employment of veneſection, takes notice of this (p. 88. 89.).

127. But if this remedy afford no relief, or if the fatneſs of the neck prevent its being employed, ſome, with Araeteus and Huxham, ad-

viſe letting blood from both arms at the ſame time, and the reſpiring of cold air, that the humours may be the more readily thrown off from the lungs *. Nor is it without advantage to inhale by the mouth the vapour of vinegar and hot water; to relax the abdomen with fomentations; to dip the feet and hands in warm water; and in ſome meaſure to irritate the limbs by means of ligatures and frictions.

* Rozier remarks, that arteriotomy is propoſed here by ſome, and that it may be of ſervice. But at the ſame time he warns the practitioner, that this can ſcarcely be done without danger, excepting in the temporal artery. For he does not think that Avenzoar is to be imitated, who, when labouring under inflammation of the cheſt, opened his radial artery with ſucceſs.

127. It ſometimes happens, on account of the rapid loſs of ſtrength which follows bleeding, particularly in malignant diſeaſes, that a vein cannot be opened as long as neceſſary, or that the conſtitution of the patient does not bear it. In that caſe, after one or two ſlight bleedings, or even immediately at the beginning of the diſeaſe, it is attended with advantage to apply dry and bloody cupping-glaſſes to the back and breaſt, or to clap leeches on the hœmorrhoidal veins, eſpecially in perſons accuſtomed to a diſcharge from them; and to exhauſt as much blood as the ſtrength can bear, and the violence of the diſeaſe requires. The blood muſt likewiſe be drawn with the greateſt caution in the peripneumony which ariſes from a metaſtaſis, if the ſtrength be

exhauſted, and the ſtrength of the pulſe, and goodneſs of the whole habit, do not authoriſe it. Some adviſe not opening a vein beyond the fourth day, being afraid of checking the concoction, and the excretion of the expectoration, by which the diſeaſe is reſolved. But although the diſeaſe frequently arrives at concoction within the fourth day, this is not an invariable occurrence. Not unfrequently the violence of the diſeaſe exceeds thoſe limits, and its crudity is prolonged beyond that period. When this happens, provided violent ſymptoms of crude inflammation, eſpecially pain, difficult reſpiration, great fever, and a violent and hard pulſe, continue, blood may be drawn at any time, as the moſt experienced practitioners are accuſtomed to do. Nay, it even ought not to be omitted when the inflammation, after being allayed, returns again, whatever the day be, whether it be the ſeventh, fourteenth, twentieth, or later.

128. As bleeding, therefore, in inflammation, is conſidered as being by far the beſt remedy, ſo that our principal reliance is placed in it, and without it ſcarcely any advantage is derived from the other remedies employed; it follows that, when peripneumony is threatened, it ought to be employed to prevent it. Sometimes, however, the diſeaſe is ſo ſlight, and the fever ſo inconſiderable; the reſpiration ſo little affected, while the expectoration, from the beginning, being yellow and tinged with blood, is freely diſ-

charged; or the urine depoſits a copious white ſediment; or a copious bilious diarrhœa occurs; and the ſkin is all over bedewed with a ſweat, in conſequence of which the heavineſs or pain of the cheſt ſo remits, that it appears that the inflammation is reſolved; in which caſe moſt adviſe the bleeding to be omitted, that the operations of nature may not be improperly diſturbed. And this ought to be the more attended to, the leſs the relaxed condition of the ſolids and fluids, and favourable temperament of the body, ſeem to oppoſe the reſolution.

129. It is likewiſe improper in that caſe (128.) to attempt any other evacuation. We muſt then only take care that the ſalutary motions and efforts of nature be performed, which is effected by temperate air and the frequent renewal of it; by inhaling the ſteam of warm water; by diluent, ſaponaceous, cooling drink, taken warm; by gentle clyſters, and emollient fomentations applied to the belly; by tranquillity and reſt; by weak diet; and by all thoſe things which open the pores, correct and reſolve the humours, and promote the excretion of the matter which is corrupted, or adhering to the lungs, by expectoration, by the kidneys and pores.

130. For alleviating the pleuritic pain, the proper remedies are external applications of things which prove emollient and diſcuſſing, or repreſſing; namely, ſponges dipt in a decoction of mallows, chamomile, mellilot, and elder-flowers,

with the addition of a little vinegar; a bladder half-filled with oil or milk; cataplasms of marsh-mallow-roots, of mallow-flowers, lint-seed, and fænugreek, prepared according to art; liniments of the ointment of poplar-trees, or of the oil of violets, water-lilly, hyoscyamus, and the like; and if it be necessary to employ more discussing than relaxing means, it is necessary to add to these camphor and saffron. Van Swieten recommended the application of flannel, wet with an emollient decoction, to which soap has been added, or with milk and water, to be applied to the part, and frequently renewed, that they might not prove hurtful by cooling. With the same view, he applied to the part hot bricks. The soap is used in the proportion of half an ounce to the pound of the decoction. But if the pain do not yield to these remedies, nor abate, after scarifying the part deeply, a cupping-glass ought to be applied, and as much blood as possible drawn. For in this manner the inflamed part, whether it be internal or external, is very quickly relieved, and without loss of strength. It is likewise attended with the greatest advantage, as has for some time been well known, to apply a blister of cantharides, which is both remarkable for its discussing and resolving property, and draws the humours to the surface, in consequence of inducing an ulcer. But it is very probable that these are employed more advantageously in that species of pleurisy which is

ſeated in the containing parts of the breaſt (105. 110.), and eſpecially in that which is occaſioned by a *rheumatic* pain (111.), and proceeds from cold, than in the ſpecies affecting the lungs only; although it cannot be denied that they poſſeſs ſome revellent property in this ſpecies alſo, as well as in the *pleuro-peripneumonia*, becauſe probably, by drawing a greater quantity of blood to the external thoracic veſſels, its appulſe to the internal veſſels, and eſpecially to the bronchial artery and lungs, becomes leſs. But in whatever manner this happens, it is eſtabliſhed beyond a doubt, that theſe remedies ſometimes diſpel the pain with the greateſt diſpatch, and act like a charm. But if the cantharides, when applied without having been preceded by bleeding, or after blood being only once drawn, immediately diſpel the pain, and the morbid matter has not paſſed out of the body by ſweat or any other critical evacuation, a prudent phyſician will draw blood a ſecond time, that the complaint may not attack other parts in conſequence of its tranſlation *.

* Rozier, l. c.

131. But if the pain diſtreſs the patient ſo much as to occaſion conſtant watching, or if the heart by conſent become ſo ſpaſmodically affected as to give riſe to a ſmall, quick, low pulſe, and if the reſpiration ſeem to be prevented, it is neceſſary to have immediate recourſe to paregorics. Of theſe, crude opium, or the *lauda-*

num liquidum of Sydenham, or the *pilulæ de cynogloſſa*, or the *diaſcordium Fracaſtorii*, or the *ſyrupus de meconio*, as having been frequently employed by others as well as myſelf with ſucceſs, hold the chief rank; and will be the more ſerviceable, if a troubleſome cough ſhould require being allayed. For ſometimes ſo great is the acrimony of the inflammatory cauſe, and the irritability of the parts affected, that a conſtant inclination to a dry cough is experienced, completely depriving the patient of reſt. In which caſe, demulcent, anodyne, and oily remedies muſt at the ſame time be employed. Therefore, decoctions of marſhmallow-root, or barley, or ſaleb; mucilages of gum-tragacanth, or gum-arabic, or of the ſeeds of flea-wort, fænugreek, or biſmalva; emulſions of ſweet almonds, and of the ſeeds of white poppy; linctuſſes of freſh lint-ſeed oil, or oil of almonds, and of the ſyrup of wild poppy, or marſhmallows, may be employed. But when there is great congeſtion of the lungs, cauſing ſtrong inclination to ſleep, there is danger of ſuffocation; or when ſymptoms of concoction are preſent, and the matter is eaſily expectorated, it is proper to abſtain from thoſe remedies which contain opium, or, at any rate, they muſt be employed with the utmoſt caution, for the expectoration may be checked, and the patient ſuffocated, by the employment of opium *.

* The opium is deprived of its narcotic property by employing the method adopted by Boucquet, already deſcribed in the note upon par. 232. of the fourth volume.

132. After one or two bleedings, if a bitter taſte of the mouth, the tongue being covered with viſcid mucus, if nauſea, and other ſymptoms of crudity, or other putrid colluvies in the *primæ viæ* be preſent, or if the belly be bound, it is neceſſary to relax it with ſome gentle medicine. The apprehenſion which ſome practitioners entertain of checking the expectoration ſo neceſſary in theſe complaints, by means of purging, is groundleſs, providing the belly be purged at the beginning, while the diſeaſe is ſtill crude, by gentle medicines. Lint-ſeed oil, or that of olives, or ſweet almonds expreſſed without the aid of fire, manna, caſſia, dried raiſins, Glauber's ſalts, whey prepared with cream of tartar, or tamarinds boiled in it, and the *ſyrupus aureus ſalutivus*, are employed with the greateſt ſucceſs, eſpecially when an accumulated bilious colluvies ſtagnates in the duodenum and neighbouring parts. But the ſafeſt of all remedies, during the progreſs of the diſeaſe, and through all its ſtages, are injections. Theſe, without doing any injury, keep the belly open, and, when it is bound, relax it with great relief to the diſeaſe.

133. Beſides repeated bleeding, until the force of the inflammation has been broken, and purging, by which the *primæ viæ* are freed from ſordes, and a flow of humours is derived to the inferior parts; it is likewiſe proper carefully to attend to inducing a certain degree of laxity in the ſolids, to allay the heat of the blood, to blunt

its acrimony, and to dilute lentor, if any be preſent, by means of a ptiſan of barley, or oats, drunk abundantly and warm; by infuſions of violet-flowers; of wild poppy; of leſſer daiſy; of verbaſcum; by decoctions of the roots of graſs, of liquorice, marſh-mallows, raiſins, and jujube-tree; by emulſions of the cold ſeeds; to which occaſionally may be added, thoſe things which poſſeſs a gently attenuant, inciſive, and ſaponaceous property, as purified or antimoniated nitre, honey, ſimple oxymel, the rob of elder-berries, ſyrup of vinegar, and that of the juice of lemon, violets, currants, barberries, and ſimilar fruits, by which not only is the adhering inflammatory matter more eaſily diſcuſſed, but likewiſe the tendency of the blood and ſerum to concrete, corrected.

* The quantity of blood which ought to be taken muſt vary according to the patient's age, temperament, habit of body, and the ſeaſon. In adults, Sydenham did not exceed forty ounces. But in our climate, when the pleuriſy or peripneumony is exquiſite and genuine, and proves obſtinate, while the ſtrength is ſufficiently great, and the patient of the ſanguine temperament, we frequently proceed to the extent of ſixty or eighty ounces, or even more. Nor is childhood to be excluded from this evacuation. For in children, the proper proportion being obſerved, a vein may in like manner be opened, not once only, but twice or thrice, which is generally attended with the greateſt advantage.

134. Under this head, likewiſe, come the diaphoretic antimony, without ablution; camphor; ſpiritus Mindereri, the root of calegula, and Virginian polygala, and that of our own country *,

and of marine fern boiled in water; infuſions of the tops of the carduus benedictus †; of the genepum Taurinenſe, of the ſcabioſa, betony, &c. by which, alſo, a gentle ſweat being promoted, it directs the force of the diſeaſe from the centre to the circumference; which is attended with advantage, chiefly when ſymptoms of concoction appear, at leaſt in the urine. Nor does it ſeem proper to intirely exclude here the jelly of hartſhorn, gently acidulated with citron, or lemon-juice, and diſſolved in a great quantity of watery drink, as it is ſaid to promote a diaphoreſis. Crabs eyes, boars-tooth, and goats-blood, which have been ſo much recommended by judicious practitioners, are now juſtly conſidered as being altogether futile remedies in the cure of pleuriſy. To theſe ſome add ſpermaceti, of the emollient and reſolvent property of which pretty ſtrong proofs are to be found.

* Both ſpecies of polygala, whether that of Virginia, or that of our own country, prove inciſive and expectorant. Its virtues have been celebrated by Tennent (*Mem. de la Societe Roy.* ann. 1739.) and ſtill more by Bouvart (*ibid.* ann. 1744.). It is recommended principally in the cure of the dry pleuriſy, and ſeems to poſſeſs ſomething of a ſpecific property. It firſt occaſions vomiting; afterwards it moves the belly, excites an expectoration, and ſhortly alſo proves diuretic. It is employed in the following manner: Rec. Polygal. Virg. unc. 1. Decoq. in aquæ commun. pinta ad medietatis conſumptionem. Colatur. dentur duo vel tria cochlearia ſingulis horis. D. Paul, alſo, in his treatiſe on peripneumony, warmly recommends it. See *Extract. litt. Europ.* T. iii. an. 1762.

† Lange obſerves: "In treating the ſevereſt caſes of pleuriſy, after premiſing copious bleeding, and repeating it according to circumſtances in the ſide affected, when the patient's advanced age,

bad living, or a virulent contagion, did not forbid its employment, merely by uſing the extract of the *carduus benedictus*, to the extent of at leaſt four ſcruples every day, I have a thouſand times reſtored patients to health. The efficacy of this remedy was known alſo to Geoffroy, who pointed out the neceſſity of employing it at Paris." *Miſc. Verit. faſcic.* 1. p. 75. 76.

135. The expectoration, which frequently ought to reſolve the complaint, ſometimes on account of its too great viſcidity and coherence, can ſcarcely be brought off, or with the utmoſt difficulty. Sometimes, alſo, on account of the *irritability* and *ſenſibility* being overpowered, it is wholly ſuppreſſed. In that caſe, beſides a pretty ſtrong decoction of *polygala* or *dulcamara*, of which a few ſpoonfuls are to be occaſionally given, we muſt have recourſe to oxymel of ſquills, ſyrup of tobacco, the *ſyrupus de eryſimo Lobeli*, ſpirit of ſoot, of ſal ammoniac, kermes mineral, elecampane root, or Florentine orris-root. Some even do not heſitate to recommend the tincture of cantharides internally *. But it is a ſafer practice to apply them to the ſkin ſo as to raiſe bliſters. For in this way they not only call forth the complaint, and excite the languid power of the ſolids; but, likewiſe, by introducing a cauſtic ſalt into the ſyſtem, they diſſolve the ſluggiſh fluids, and promote all the excretions †.

* Fantini, *Breve iſtoria di due mediche oſſervazioni ec.* Faenza, 1777.

† Maret recommends the employment of bliſters in pleuriſy. He obſerves, however, that they may be employed in the *ſpurious* com-

plaint, without veneſection, which the *real* pleuriſy requires, being premiſed, *Mem. de l'Acad. de Dijon*, T. 1. p. 93.

136. Hence, even at the beginning of the complaint, when bleeding cannot be permitted, (131.), or when the expectoration comes off with difficulty (134.), or when the pain is very urgent, they may be applied to the breaſt, arms, thighs, calves, and ſoles of the feet. For ſuch is their power, that they have frequently been obſerved to ſnatch the patient from the jaws of death. But the benefit to be derived from them depends not a little on the ſeaſon, climate, and conſtitution of the patient. For ſometimes ſo far from proving ſerviceable they are even alleged to do harm. It muſt be obſerved, however, that at times the expectoration is ſuppreſſed on another account, namely, a return of the ſeverity of the inflammation. When this happens, the fever, pain, and difficulty of breathing, together with the other ſymptoms, ſuffer an aggravation. In that caſe, when the pulſe is ſtrong, hard, or great, and the ſtrength not much exhauſted, nothing is more efficacious for recalling the expectoration, than a ſecond bleeding, and next having recourſe to the remedies pointed out in par. 30. et ſeqq.

137. Hitherto I have been treating of the cure of *true* peripneumony and pleuriſy. But it is by no means always neceſſary to have recourſe to all the remedies mentioned. Frequently mere bleeding, and the copious drinking of water,

prove ſufficient. But the *ſpurious peripneumony* of the ancients (108.), deſcribed by Piſo, ſeems to require ſparing and repeated bleeding, demulcents, involving and thickening remedies; gentle cathartics of caſſia and manna; bliſters; revellents; and correctors, as whey, and milk itſelf. In like manner, the *ſpurious peripneumony*, by Riverius named *pituitoſa*, and by Sydenham *notha*, requires bleeding, but not ſo frequently repeated; as alſo gentle cathartics, or at leaſt mild emetics, and every kind of revellent and inciſive remedy (133. 134. 135.). The *malignant* and *gangrenous* ſpecies of the complaint (113. 114.), ſcarcely bears one bleeding, though employed at the very beginning of the diſeaſe. For when repeated, it for the moſt part reduces the ſtrength; increaſes the anxiety; quickly induces watching and delirium; as alſo trembling, cold ſweats, and, laſtly, even ſudden death, while the patient is complaining, or converſing with his friends. Sometimes, however, certain epidemic conſtitutions are obſerved, which are more favourable to bleeding. But here alſo the utmoſt caution is requiſite. After the bleeding employed at the very beginning of the diſeaſe, vomiting may be once or twice excited by means of tartar-emetic, largely diluted, and taken at divided intervals, or by means of oxymel of ſquills, or ipecacuanha. Afterwards *alexipharmacs* and *antiſeptics* may be employed. Camphor, bark, ſcordium, and cha-

momile, are the moſt proper remedies in this caſe. It is likewiſe ſerviceable to inſpire the vapour of water, impregnated with ſpirit of ſal-ammoniac, and reſins gently burnt. The violence of the complaint, however, ought to be quickly drawn outwards by means of cantharides applied to the breaſt and legs. Moreover, in theſe gangrenous and malignant diſeaſes of the breaſt, the patients ought to be allowed more generous diet, and even ſome wine.

138. So various are the peculiar *conſtitutions* of this diſeaſe deſcribed by authors (137.), that it would be an endleſs taſk to enumerate them individually *. And, what is a great deal worſe, they often baffle the moſt approved method of treatment; nay, that which has formerly proved ſerviceable in a new epidemy frequently turns out by no means well. Hence the practitioner, however great his experience may be, is frequently at a loſs what remedy to employ. It is, therefore, requiſite that he ſhould inquire into the peculiar diſpoſition and *epidemic character* of the reigning diſeaſe, that by experiment, as it were, he may be enabled to aſcertain the moſt ſuitable plan of treatment.

* In the *Recueil d'Obſervations de medec.* already quoted, accounts of ſuch epidemics are frequently to be met with. Beſides that one already quoted from Deplaign, another is deſcribed in the ſame work (p. 295.) which was obſerved in Oct. 1757.

139. The ſpecies of the complaint, named *eryſipelas pulmonum* (115.), comes next to be con-

ſidered. In it bleeding ought to be employed with the utmoſt caution, as it frequently proves hurtful. It is prejudicial likewiſe in the *bilious* pleuriſies, both *primary* and *ſecondary*, in which emetics and cathartics are preferable. For as the complaint is occaſioned by the higheſt degree of tenuity and *warm acrimony* of the fluids, we do not find the inflammatory gluten, by which the blood is diſpoſed to concrete and cohere; nor are the viſcera after death obſerved to be covered with a mucous membrane (106.), requiring heat for its ſeparation. Beſides more ſparing bleeding, therefore, it is eſpecially neceſſary to employ cold drinks *, when the climate, temperament, and age of the patient, and the ſeaſon of the year, are very warm, or the ſolids are ſo languid, that they cannot be reſtored to their former vigour, unleſs by the uſe of cold drink. It is likewiſe proper occaſionally to interpoſe cathartics, eſpecially of the ſubacid kind, in order to evacuate the bilious or warm colluvies from the bowels. The chief of theſe are, tamarinds, cryſtals of tartar, and acidulated whey.

* Bertini in a caſe of pleuriſy (probably of the *eryſipelatous* kind), employed cold water with advantage (Mart. Ghiſi, *Lett. med. lent.* 1. p. 33.). See Deplaign's method (*Recueil d'obſervations de medec.* T. vii. Juillet, p. 168.

401. Sometimes not only in the *eryſipelas pulmonum*, but alſo in *peripneumonies* and *bilious* and *ardent pleuriſies*, the fever is ſo violent, that even after ſeveral bleedings it remits little or nothing, and

the pulſe continues remarkably frequent and ſtrong. I look upon the moſt convenient remedy for allaying the exceſſive violence of the fever to be, ſulphuric acid ſweetened with ſix times its quantity of the ſyrup of violets, to be taken to the extent of one ſpoonful every hour, a large draught of water being always drunk above it. Tiſſot likewiſe, I find, recommended this remedy. For all acids powerfully diminiſh the irritability of the heart, correct the alkaleſcent acrimony, and remarkably allay the heat of the blood *. Hence, when the febrile motion becomes immoderate, it may be readily reſtored by theſe means. But the more acrid acids aggravate the cough, and thoſe of the vegetable kingdom likewiſe coagulate the blood, or prediſpoſe it to coagulation †. They ought to be employed, therefore, with the utmoſt caution, and their indiſcriminate uſe ſhould be avoided.

* See Vol. I. *Concerning Fevers*, par. 295.; and Vol. II. par. 271. *in the note.* † See Vol. IV. *Of Diſeaſes of the Cheſt*, par. 34. and l. c. Vol. I.; and Vol. II. par. 130.

141. The *baſtard* pleuriſy (110.) requires nearly the ſame remedies as thoſe of the genuine complaint mentioned in par. 124. and thoſe which follow. If, however, the latter do not terminate in reſolution, it is apt to go on to an abſceſs, which, pointing outwards, frequently betrays itſelf by a ſoft ſwelling, and ought then to be opened for the ſpeedy evacuation of the matter *. The *ſpurious* ſpecies, again, which may alſo be named

rheumatic (111.), muſt be treated like rheumatic affections, with one or two bleedings, with dry and bloody cupping-glaſſes, with emollient fomentations, with gentle cathartics, and, laſtly, with diluents and mild diaphoretics. Moreover, the fixed pains, unaccompanied with fever, which affect ſcorbutic, venereal, and hypochondriacal patients, as they are the effects of another diſeaſe, are to be cured by removing the primary complaint. The phyſician muſt therefore treat them with antiſcorbutic, antivenereal, antihypochondriacal, carminative, and laxative remedies. Sometimes the pain of the ſide, even when unaccompanied with fever, is ſo ſevere and fixed, that it cannot be removed, unleſs by applications (113.), particularly of cantharides, and by inducing an ulcer to be kept open for a length of time. Such a remedy has likewiſe been of ſervice when the pain has been ſeated in the intercoſtal nerves, and appeared to be of the convulſive kind. But the convulſive pain requires emollient, antihyſterical, and anodyne remedies. When the complaint ariſes from depraved digeſtion, bile or worms (111.), emetics, gentle cathartics, and anthelminthics, are chiefly to be employed. If it be occaſioned by an intermitting fever, and recur periodically, after bleeding, and cleanſing the *primæ viæ*, we muſt have recourſe to the peruvian bark †. When it ſupervenes upon ſmall-pox and meaſles (112.), it ought to be removed as quickly as poſſible, by

opening a vein, leſt the conſequence of delaying ſuch a remedy be the patient's ſudden death. The remaining ſecondary and ſymptomatic ſpecies of the complaint (112.), are to be treated as depending upon putrid, bilious, or gaſtric fever; on gout or rheumatiſm; on phthiſis pulmonalis; on the miliary miaſma; on catarrh; on a metaſtaſis; on hydrothorax; on ſuppreſſion of the milk or lochia; and other diſeaſes. It may be proper here to obſerve, that unſkilful and inattentive phyſicians, when they fall in with putrid and bilious pleuriſies, which ariſe from a putrid colluvies of the *primæ viæ*, or are ſymptoms of bilious fevers, frequently conſider and treat them as a primary diſeaſe, in conſequence of which ſcarcely one patient is preſerved. This happens particularly in certain epidemics, in which thoſe who aſcertain the nature of the diſeaſe draw blood ſparingly and cautiouſly, or place more reliance upon emetics or cathartics, and thus preſerve moſt of their patients.

* See our addition, or *Giunta alla oſſervaz.* xxviii. *della*, par. 2, *de' Sagg. di med. prat. di* Pier. Paolo Dallarmi.

† See alſo another, *Giunta al conſulto* 3. par. iii. of the ſame work. Fayence edit.

CONCERNING IMPOSTHUME, EMPYEMA, SCIRRHUS, AND GANGRENE.

142. WHATEVER method of cure be employed, the violence of the diſeaſe is ſometimes ſuch, that it either quickly proves fatal, or paſſes into other

lingering complaints. Inflammation of the lungs or cheſt, therefore, when it does not terminate in reſolution within *fourteen* or *twenty-two* days, and is not removed by expectoration, according to Hippocrates, goes on to *ſuppuration.* If the pus which is formed be not ſpeedily expectorated, but accumulated within the lungs, as it were in a cyſt, ſuch an abſceſs is named a *vomica*, or impoſthume *; in the ſame manner as a ſimilar collection of pus, ſucceeding to tubercles of the lungs, or to the congeſtion, which is the conſequence of a catarrhal affection, or to a wound, contuſion, or ſpitting of blood, or is formed in any other viſcus, is alſo named vomica. But if the pus paſs from the lungs or pleura, into the cavity of the thorax, and occupy that empty ſpace, the diſeaſe takes place which we name *empyema:* although the ſame name is applied to a collection of pus in the cavity of the thorax, from whenceſoever derived, whether from the mediaſtinum, pericardium, or diaphragm, or from the liver or ſpleen itſelf, or from fluids effuſed into the cavity of the thorax, and there becoming putrid. Frid. Caſimir Medicus † obſerved an empyema in conſequence of the pericardium having ſuppurated and become corroded; and Morgagni ‡ mentions an inſtance of its having ariſen from an effuſion of pus, from an abſceſs of the liver, paſſing through the diaphragm into the thoracic cavity. I myſelf have ſeen the complaint occaſioned by pus paſſing in

like manner from the ſpleen, after eroding the diaphragm, into the left cavity of the thorax. I aſcertained the preſence of the complaint by the ſwelling of the ſpleen, which had been affected with an inflammatory pain, ſuddenly diſappearing, and by the difficult reſpiration which enſued, and the greater quantity of pus diſcharged from the opening, which had been formed in the left cavity of the cheſt, in conſequence of the pleura having undergone ſuppuration.

* L. 1. *De morb.* n. 24. † *Obſerv. med.* vol. ii. p. 648.

‡ *De ſed. et cauſſ. morb.* epiſt. 26. n. 24.

† Richa *(Conſtit. epid. Taurin. alter.)* deſcribes pleuriſies and peripneumonies, which ſucceeded to epidemic eryſipelaſes, and readily paſſed on to impoſthumes. In par. 61. he mentions the caſe of a nun, who ſpit up the follicle of an impoſthume. He names thoſe *vomicæ folliculatæ* which are formed by the expanſion of any pulmonary veſicle filled with pus. He is of opinion, that the veſſels diſperſed around the veſicle may pour blood into any of them, and there form a collection of pus. And in par. 63. he ſays, that pus is formed either by the blood or lymph, and that it varies according to the matter from whence it is formed. He likewiſe diſtinguiſhes true pus from that which is purulent.

‡ It likewiſe appears, from an obſervation of M. Thomſon, to be found in *Com. Lips.* vol. viii. P. iii. p. 404. that blood may be poured into the pericardium without any rupture.

143. It is a proof that ſuppuration is commencing (142.), if, while the excruciating pain ceaſes, the fever ſtill continue; or if, without any manifeſt cauſe, it ſuffer an irregular exacerbation, being milder in the day-time, and more ſevere in the evening, ſometimes accompanied with rigors and flushing of the cheeks; and,

laſtly, if, in place of a pain in the part formerly affected, a ſenſe of weight be felt there. It is farther proved, if the expectoration, which is thrown off ſparingly from the beginning, be accompanied with a ſevere cough, at firſt ſaltiſh, and afterwards becoming ſweeter; if the breath be fetid, and the difficulty of reſpiration continue. When the ſuppuration is completed, copious thin ſweats break out upon the cheſt and neck; the cough, and the deſire to cough, haraſs the patient without any remarkable expectoration; the eyes become hollow, and the nails adunque; the cheeks become fluſhed; the extremities of the fingers are unuſually warm; the appetite is loſt; a colliquative diarrhœa ſometimes comes on, and puſtules break out all over the body. But if the ſuppuration take place on one ſide only, the patient, when he turns upon the ſound ſide, perceives a ſenſe, as it were, of a weight above him; the ſide alſo in which the ſuppuration has taken place, is generally warmer than the other, and is frequently painful, and ſwelled externally. Moreover, the pus effuſed into the cavity of the thorax betrays itſelf by a fluctuation or noiſe, when the body is ſuddenly ſhaken or turned round, unleſs the whole cavity be completely filled; in which caſe no fluctuation or noiſe can be perceived. In that caſe, the greateſt difficulty of breathing, and a ſlow fever, are perpetually preſent; the diaphragm is depreſſed, in conſequence of which it raiſes the hypochondria and epigaſtrium with

a ſenſe of weight, cauſing them to ſwell out ſo as to reſemble abdominal obſtructions or aſcites *, as I myſelf have frequently obſerved; the feet, and likewiſe the face, ſwell; the urine depoſits ſome white, fetid, or viſcid ſediment; a putrid taſte is ſelt in the mouth, from which a ſimilar breath proceeds; the body waſtes, and the other phenomena of tabes take place. From the obſervations of diſtinguiſhed authors † it appears, that the dyſpnœa, which by ſome has been conſidered as an invariable ſymptom of empyema, is ſometimes abſent, and that the patient can lie with freedom on either ſide. Laſtly, according to Avenbrugger, the thorax, in empyema, when ſtruck in the lower and back part, ſends out an obſcure ſound.

* Van Swieten, par. 302. 303. † Panaroli, Marchetti, Le Dran, Morgagni, and others. See *Giorn. med. Ven.* vol. ii, p. 350. ‡ p. 79.

144. Impoſthumes generally burſt upon the *twentieth* day from the firſt acceſſion of the pain or weight, or from the firſt attack of the fever or rigor; ſometimes on the *fortieth*, or even *ſixtieth* day; as we learn from the *Coacæ Prænotiones*. I myſelf have obſerved them break much later, that is, even *three months* after the commencement of the complaint, the patient afterwards completely recovering. The perſons who recover are ſuch as, immediately on the burſting of the vomica, are freed from the fever, and freely diſcharge a white pus, without ſmell, ſmooth, not

variegated, and well digeſted, and are not attacked with a diarrhœa. The contrary happens, when ſymptoms the oppoſite of theſe occur.

145. When an impoſthume forms gradually, and without any manifeſt cauſe, or ariſes ſpontaneouſly, it ſometimes lurks in the conſtitution, according to Tulpius, ſo as to betray itſelf by ſcarcely any marks. It is attended, however, firſt with a ſlight dry cough, and afterwards with a moiſt one. Afterwards the reſpiration becomes more uneaſy, the breath fails, and the body waſtes, although in the mean time what is expectorated manifeſts neither pus nor blood. Hoffman * affirms, that it is indicated by the following marks; a long-continued, fixed pain, impeding the reſpiration, which is neither alleviated nor removed by bleeding, or other remedies, but holds on, accompanied with a dry cough, quick pulſe, fetid breath, emaciation, loſs of ſtrength and appetite, and copious ſweating. The ſize of the impoſthume is inferred from the greater degree of dyſpnœa, extreme anxiety, and hard pulſe, ſometimes intermitting in the erect poſture. Unzer †, however, from extenſive experience has ſhewn that the ſymptoms of *impoſthume* are altogether ambiguous. But when one is about to break it is almoſt uniformly attended with rigors and fever.

* *Med. ſyſt.* † *Promptuar. Hamburg.* vol. ix. p. 309. See *Comment. Lipſ.* vol. ii. P. iii. p. 480.

146. On an impoſthume burſting, the patient

is either ſuddenly ſuffocated, in conſequence of the quantity of pus preſſing upon and obſtructing the air-veſſels of the lungs; or, if he eſcape this danger, ſhortly afterwards, the vital powers being intirely overcome, he ſinks *, or is cut off by a ſlow conſumption †. It appears, however, from the obſervation of eminent men, that by far more eſcape from that impoſthume which ſucceeds to peripneumony or pleuriſy, although a great quantity of pus be diſcharged at once, than when the pus is diſcharged from ſmaller abſceſſes ‡. Empyema has been ſeldom obſerved to be removed by abſorption and metaſtaſis; it very rarely opens a paſſage for itſelf through the corroded lungs, and is thus expectorated; more frequently it paſſes through the pleura and intercoſtal muſcles, and is gradually diſcharged outwards.

* Van Swieten, § 1204. 1205. † Hippocrates, Meade, Van Swieten, &c. See Van Swieten, § 2106.

‡ See Dallarmi, *Sagg. di med. prat.* P. iii. p. 262. 263. Willis obſerved a particular ſpecies of vomicæ, which are *callous* and continue to pour out pus for ſeveral years. † See Richa, § 62. *Conſil. epid. Taurin.*

147. The preſence of an impoſthume being detected by the marks peculiar to it (142. 143. et ſeq.), its burſting by ſome is promoted by means of pectorals, lubricating and emollient remedies; by inhaling the vapour of vinegar or warm wine; by ſinging; by ſhaking the body, and mounting up ſtairs; by ſternutatories; or even by vomiting. But the phyſician ought to be very careful in employing the three laſt re-

medies, and ought to weigh well the condition of the patient's ſtrength and other ſymptoms. The evacuation of the matter, when it has once commenced, muſt be promoted by the remedies elſewhere propoſed, in treating of *cough* (chap. I.), or *phthiſis pulmonalis* (chap. III.). After the cavity of the impoſthume has been well cleanſed by means of vulnerary remedies, we muſt have recourſe to vegetable diet, milk, and peruvian bark, to promote its healing *. Lime-water, alſo, when an impoſthume diſcharges pus too long, and cannot be eaſily dried up, either taken alone, or mixed with water, is celebrated by authors of no ſmall note. With the ſame view, tobacco is recommended by Ettmuller as a detergent and at the ſame time healing remedy †.

* See Dallarmi, *Sagg. di med. prat.* p. 2. offerv. xxvii. and thoſe which follow.

† In Schroderi *Dilucid. Phytolog.*

148. In treating an *empyema*, we muſt quickly have recourſe to the paracenteſis, which has ſometimes been attended with ſucceſs *. It is performed in the back between the *ninth* and *tenth* ribs, five or ſix inches from the ſpine. The ancients performed this operation in the ſide, between the *ſixth* and *ſeventh* ribs. It is likewiſe ſometimes done in the part of the ſide where the ſwelling is. Hippocrates propoſed perforating the *diaphyſis*, or body of ſome of the ribs. A perſon

labouring under a ſuppuration from pleuriſy had the ſide affected perforated, in conſequence of which he completely recovered, and lived ſeveral years †. I myſelf have ſeveral times proved the ſucceſs of this operation ‡. Sometimes, however, it has been of no avail. In the caſe of a patient labouring under a bilious pleuriſy, which was often ſucceeded by *hydrothorax*, a ſurgeon, by having recourſe to the operation of paracenteſis, drew off a large quantity of ſerum, but next day the patient was cut off ‖. That happens chiefly when the luugs are in a great meaſure corrupted and eaten through. Some object to the operation, becauſe, as the pleura frequently adheres to the lungs, the latter may be wounded. In which caſe the ſide ought to be opened, not by puncture, but by inciſion; after which the lungs are to be gently put aſide with the fingers, or the handle of the ſcalpel §. Willis has reſtored ſeveral patients by forming an iſſue where the breaſt is generally opened, and keeping it up for a length of time ¶. The ancients did the ſame by means of burning the part. The Egyptians, as Alpinus informs us, perform the burning as follows **. They wrap up a piece of cotton, in the form of a pyramid, in a piece of linen, and place its baſe on the part to be burnt. They then apply a light to its apex, and allow it to burn down, until the ſkin below becomes as much burnt as poſſible. Hippocrates has ſhewn what kind of pus, to prove ſerviceable, ought to be

diſcharged, in conſequence of opening or burning the part. He obſerves: "Patients labouring under empyema, when their cheſt is burnt or opened, if a diſcharge of pus which is ſparing and white take place, recover; but if it be bloody, dark-coloured, or fetid, they are carried off††." In the mean time, antiſeptics, and the mildeſt balſamics, muſt be given internally; while external applications, poſſeſſing a cleanſing and healing property, are at the ſame time employed. Patients who have undergone ſuppuration of the *mediaſtinum* or *pericardium* (103.), are to be treated nearly in the ſame manner. For the pus collected under the ſternum is drawn off by perforating it, or by means of a *pyulcum* ‡‡. How it ought to be drawn from the pericardium will be pointed out in the following chapter (191. 192.).

* Van Swieten, Ludwig, *Bayort de Jonquerès Thes. Paris*, an. 1762. Orteſchi, *Giorn. di med.* c. ii. p. 350. † Guidetti, *Diſſert.* ii. p. 187. ‡ Dallarmi, *Sagg. di med. prat.* where examples are adduced by Burſerius in the *additions*. || Guidetti, l. c. § 12. p. 187.

§ Werner cured an *empyema* by an *inciſion* made in the right ſide of the thorax. He fixed his ſcalpel between the *eleventh* and *twelfth* ribs, about four inches from the vertebræ, in ſuch a manner as to perform the inciſion along the direction of the ribs, near the upper ſide of the eleventh rib, to avoid injuring the *intercoſtal artery*. Immediately on dividing the intercoſtal muſcles, twenty ounces of pus were diſcharged. On introducing the finger within the cavity of the thorax, the lungs were no where found adhering to the pleura. Inſtantly upon the diſcharge having taken place, the ſymptoms were relieved, and the patient ſhortly afterwards recovered. See *Comment. Lips.* vol. iii. P. i. p. 45.

¶ *Pharm. rat.* ſect. i. c. xi. p. 120. ** *De med. Ægypt.* l. iii. c. 12. Orteſchi, l. c. an. 1764. n. 44. p. 350. †† Aph. 44. ſect. vii. ‡‡ Riolan. *Enchirid. anat.* lib. iii. c. iv. p. 206.

[*Lourd alſo may be conſulted, whoſe doctrine concerning the efficacy of the paracenteſis is explained at the end of the following chapter*, par. 191.—German Editor].

149. When the inflammation, however (108.), is neither reſolved, nor terminates in ſuppuration (142.), and does not immediately, or within a few days, extinguiſh life (99. 115. 116.); then either *ſcirrhus* or *gangrene* puts a period to the inflammation. When this happens, a lingering complaint is occaſioned, particularly if the indurated part be not confined to a narrow ſpace. A ſenſe of weight is felt there; the reſpiration is difficult, particularly when the body is in motion; the patient can lie either on one ſide or on the back only, on account of being attacked with pain, cough, or oppreſſion of the breathing. But if ſmall ſcirrhous tumours, the conſequence of inflammation, be ſpread over various parts of the lungs, in that caſe they are diſtinguiſhed rather by a frequent, dry cough, aggravated by any motion of the body, or long ſpeaking, than by the preſence of other ſymptoms. Frequently, alſo, in theſe patients the pulſe is ſmall, irregular, and frequent. That affection is generally bad, which can be removed neither by gum, nor ſoap, nor hemlock, nor by other remedies, as the preparations of mercury *. If the other ſequel take place, namely, *gangrene*, it proves fatal. This happens when a violent inflammation

at the beginning has either been neglected, or has been exaſperated by calefacient remedies. When, therefore, gangrene commences, the pain, without any manifeſt cauſe, then diſappears, in place of which a weight is felt in the cheſt, and the ſtrength is greatly exhauſted; the pulſe becomes very ſmall, weak, quick, and irregular; the face pale, wan, and ſometimes of a mixed colour between red and blue; the extremities become cold; the expectoration is blue, black, and often fetid; the ſide which was affected with the pain becomes diſcoloured with a black or livid ſpot; the mind is affected; and ſhortly death cloſes the ſcene. Such a ſequel, when threatened, can ſcarcely be prevented. We are not, however, to omit employing moſt of the antiſeptics and cordials of which I have already made mention (137.).

* The reader ought here to call to mind the obſervations delivered by the author in par. 78. of the *Commentary on Inflammation*, par. 389. Vol. III. and elſewhere.

PARAPLEURITIS.

150. SOMETIMES the *baſtard pleuriſy* (110.) —which is a true inflammation affecting the pleura and external parts of the thorax—terminates neither in an *abſceſs*, nor in *gangrene*, nor in real *ſcirrhus*, nor is it altogether reſolved; but moſt of the ſymptoms abating, the patient ſeems to be ſo far reſtored, that nothing remains but a pain,

which continues for a long time, and is more or leſs ſevere. In the mean time, however, he is diſtreſſed with this pain of the ſide, and can ſcarce recover his former ſtrength. Soon afterwards, about the evening, he complains of an unuſual and diſtreſſing degree of heat, which gradually paſſes into a ſlight continued fever, every day ſuffering an aggravation in the afternoon. It is named an *amphimerina*. At its height a diſcharge of ſweat takes place, which very much reduces the ſtrength. During the remiſſion, however, which takes place in the morning, none flows, contrary to what happens in phthiſical patients.

151. Moreover, ſuch as labour under this affection can ſcarcely lie on the ſide affected, and regulate their breathing in ſuch a manner as to move and raiſe their breaſt as little as poſſible, that they may not too much aggravate the pain, which is increaſed by a full inſpiration, while the intercoſtal muſcles act ſo as to raiſe the ribs. It cannot, however, happen, that while the cheſt is ſo much compreſſed, the lungs not being ſufficiently expanded become turgid, in conſequence of the congeſtion of blood, requiring frequent ſighing and yawning to be freed from the anxiety. They have no hoarſeneſs; but, when they wiſh to ſpeak for any length of time, they become fatigued and broken winded. The pulſe, at whatever hour it is felt, is found to be quick and ſmall. The blood, when drawn, coagulates

firmly, becomes indurated, and covered with the inflammatory cruſt. Such are the ſymptoms peculiar to, and almoſt invariably attending, this complaint.

152. To theſe ſymptoms (151.) are ſometimes added, a dry cough; or a thin ſcanty expectoration, ſometimes ſtreaked with blood, on account of the difficult tranſmiſſion of fluids through the compreſſed lungs; headach; frequent yawning; and, laſtly, ſome emaciation, which, however, ſupervenes very ſlowly, and only when the diſeaſe has proceeded to ſuch a length that a purulent and bloody expectoration begins to be thrown off more abundantly.

153. This affection of the breaſt has been named by Zeuianu, a phyſician of conſiderable celebrity of Verona, in a little work which he publiſhed on it in the year 1766, *parapleuritis*, which, however, as he himſelf remarks, more frequently conſiſts merely in a pain of the ſide, left by the baſtard pleuriſy, at one time continued, at another time intermitting; ſometimes only felt on changes of the weather, or on violent motion of the body. Not unfrequently, after ſome ſpace of time, it is reſolved ſpontaneouſly, and ceaſes intirely; ſometimes, however, it diſtreſſes the patient for ſeveral months together, going through the courſe which I have already pointed out, until it induces fatal ulcers in the inſide of the cheſt, or in the lungs themſelves.

154. Let it not be ſuppoſed that this affection

is an incipient ſecondary *phthiſis pulmonalis*. For Zeuianus contends, that it differs from that complaint, becauſe in *phthiſis* the pulſe is generally weak and ſoft; becauſe the ſweat flows either at night, or after ſleep, eſpecially in the morning; becauſe the patient lies more eaſily upon the ſide affected; becauſe a thick and purulent expectoration is diſcharged; becauſe the pain, if there be any, ſeems more obtuſe, and more internally ſituate; and the emaciation proceeds with rapidity. While in parapleuritis the pulſe is ſomewhat hard and ſtronger, and all the other ſymptoms (150. 151. 152.), as I have already ſhewn, are almoſt the oppoſite of theſe.

155. As it ſeems to proceed from the inflammatory gluten being collected and ſticking in the ſide which had been affected with pleuriſy, it is to be diſcuſſed chiefly by bleeding cautiouſly repeated. For the blood, when drawn, exhibits the buffy coat. Nor is there any danger of its reducing the ſtrength more and more, as experience has ſhewn, that this remedy is borne well, and attended with advantage. Moreover, in order to completely eradicate the diſeaſe, attenuant, inciſive, and reſolving remedies, eſpecially thoſe which were recommended in the cure of pleuriſy (133. 134.), muſt likewiſe be had recourſe to. Sometimes alſo it will be neceſſary in an obſtinate caſe to adminiſter Venice ſoap, millepedes, gum-ammoniac, ſaſſafras-wood, burdock-root, that of ſmallage, bark, and mountain-reed; infuſions of the leaves of the

abſinthium Alpinum, carduus benedictus, and the like. For I have often employed theſe remedies with great ſucceſs. Whether or not is that parapleuritis a ſpecies of incipient phthiſis, which is removed, according to authors of note, by ſmall, but repeated bleedings?

INFLAMMATION OF THE DIAPHRAGM.

156. I HAVE already obſerved (103.), that in pleuriſy the diaphragm is not unfrequently affected with inflammation. It is highly probable, however, that the diaphragm of itſelf becomes inflamed primarily. This is affirmed to be a rare occurrence. Huxham aſſerts, that ſuch a diſeaſe is more frequently found than is commonly believed; while Lieutaud is of opinion, that it does not at all differ from pleuriſy. This much, at any rate, is certain, that particular ſymptoms are obſerved when the diaphragm is affected with inflammation, which differ very widely both from the genuine and ſpurious pleuriſy. Inflammation of the diaphragm, therefore, which ſome propoſe denominating *paraphrenitis*, is indicated by a very acute fever; by an excruciating pain about the falſe ribs, ſtretching to the loins and back, and ſurrounding them as it were with a girdle; by a dry cough, aggravating the pain; by the reſpiration being generally ſmall and frequent, very ſeldom great and ſlow, ſometimes by its being irregular and inordinate; by a redneſs of the cheeks, and a palpitation in the hypo-

chondres; by diſtenſion and pain of the ſame, and by their frequently being drawn upwards and inwards *; by ſighing, or an effort to ſigh; by a very quick, ſmall, hard pulſe; and, laſtly, by tremors, ſubſultus tendinum, convulſions, the *riſus ſardonicus*, panting, hiccup, and not unfrequently by delirium and madneſs. Boerhaave † is of opinion, that delirium is an invariable concomitant of inflammation of the diaphragm. But the obſervations of Morgagni and others oppoſe this opinion ‡. Sarcone || remarks very properly, that inflammation of the diaphragm is not invariably attended either with delirium, or the riſus ſardonicus, or the other ſymptoms mentioned by Van Swieten and Boerhaave §. I alſo have obſerved the abſence of theſe ſymptoms in real inflammation of the diaphragm ¶. Morgagni, therefore, with reaſon concludes, that delirium is ſometimes abſent from it, while at other times it is found accompanying it **.

* The hypochondres are drawn inwards, both by the *diaphragm* being contracted and drawing in the falſe ribs, and alſo by the *peritoneum*, with which the lower part of the diaphragm, and the hypochondres themſelves, are lined, being inflamed and attracted; which was the opinion of Riolan. *Enchir. anat.* l. 3. c. v.

† *Aph. de cog. & cur. morb.* § 909. ‡ *De ſed. et cauſſ. morb.* epiſt. vii. n. 14. || Part. i. p. 209. *Iſtor. ragion. de mal. ec.* § *In* Boerhaav. *Aph.* § 909. ¶ *Dſeaſes of the Head*, Vol. III. par. 214. et ſeq. ** L. c.

157. This dangerous and fatal malady muſt be immediately oppoſed by the moſt powerful reme-

dies. For the more violent the cauſes which have induced it are, and the acrimony of the blood which is combined with it is, the more imminent is the danger. Our expectations almoſt intirely reſt on bleeding, clyſters, fomentations, and antiphlogiſtic remedies *. But Huxham, notwithſtanding that he drew nearly an hundred ounces of blood within four days, and employed many other remedies, was unable to ſave any one labouring under *inflammation of the diaphragm* †. So much does the violence of the complaint elude the utmoſt power of medicine!

* See Vol. III. *Of Diſeaſes of the Head*, par. 215. et ſeq.

† *Epid.* vol. ii. p. 11.

CHAPTER V.

OF DROPSY OF THE CHEST, PERICARDIUM, AND LUNGS.

158. Too great an effuſion of the ſerous and lymphatic fluid into any cavity of the body, and its being collected and ſtagnating there, is properly named *hydrops*. Hence, if a collection of the ſerous fluid take place in the cavities of the head, thorax, pericardium, abdomen, uterus, omentum *, or tunica vaginalis teſtium, hydrocephalus, hydrothorax, hydrops pericardii, aſcites, and hydrocele, ariſe, concerning which I

have already ſpoken partly elſewhere †, and ſhall partly treat at preſent.

* Dropſy of the omentum ſometimes occurs alone, unaccompanied with aſcites. At firſt only a fluctuation is perceived in it, when its layers have become indurated by the preſſure of the water. Portali, *Mem. de l'Acad. Roy.* an. 1770 & 1771, p. 541.—When, however, the omentum burſts, which happens alſo in conſequence of emetics, aſcites ariſes. *Id. ib.*—Likewiſe an inſtance of dropſy of the *peritoneum* is to be found in the *Act. Helvet.* vol. vi. p. 186.—Similar inſtances are to be found in Littri, (*Mem. de l'Acad. Roy.* vol. vii.), and in Chomel, *Ibid.* p. 107.

† See Vol. III. Chap. 2. *Of Hydrocephalus and Spina Bifida.*

159. There are certain progreſſive degrees towards dropſy, properly ſo called, which it is neceſſary to know, as they are ſometimes confounded with dropſy itſelf. For if the veſſels of any kind become turgid with ſerum, ſo as to render the whole body white, they occaſion the diſeaſe named *leucophlegmatia.* Some refer this to the *cachexiæ*, others to *anaſarca.* Cachexy conſiſts in a bad habit and diſcoloration of the whole body. *Anaſarca*, again, happens, according to ſome, if a viſcid humour ſticks not only in the veſſels, eſpecially the lymphatics, but is alſo diffuſed through the ſpaces of the cellular membrane, cauſing ſuch a ſwelling of the body as does not ſo readily yield to the preſſure of the finger, nor retain the impreſſion long; although it is to be confeſſed, that all are not agreed concerning this. For Ludwig is of opinion, that in the leucophlegmatia the tumour is harder, and in anaſarca ſofter; in which reſpect he meets with the concurrence of

Van Swieten *. For the latter mentions, that in the leucophlegmatia a more *phlegmatic* fluid, and in anaſarca a thinner and more *watery* one, occaſions the complaint; that in the leucophlegmatia, the whole body is more uniformly ſwelled, and ſoft like paſte; while in *anaſarca* the ſwelling begins from below, and gradually riſes upwards.

* *In* Boerhaav. *Aphor.* § 72.

160. If moſt of the veſſels, and ſpaces of the *cellular membrane*, in ſome particular part of the body, as in the feet, hands, head, face, eye-lids, cheeks, fauces, ſcrotum, &c. become ſwelled, and the ſwelling be ſoft, cold, white, and dimple on being preſſed, it obtains the name of *ædema*, and is a kind of incipient dropſy. According, therefore, to the part which the ſerous collection occupies, various kinds of dropſy ariſe. Thus, if the whole body be affected, it is named *univerſal dropſy*; if only a part, *partial*.

161. Every dropſy has a twofold origin; namely, either from a faulty condition of the intire maſs of blood, or from a bad conſtitution of the ſolids. It proceeds from the firſt cauſe, if the ſerous part of the blood much exceed the other parts, or ſeparate from them, ſo as either to exſude through the inorganic pores of the veſſels, or to fill the lymphatics too much, or to paſs through the exhalants into the minute cells and cavities of the body, and to accumulate there; or if its acrimony be ſuch as to corrode the minute veſſels, and paſs from thence into

empty ſpaces. It proceeds from a bad organization of the ſolids, if the extreme veſſels become ſo much relaxed as to admit too great a quantity of ſerous fluid, and pour more of it into the different cavities than the abſorbents can take up; or if they be ſo overloaded and ſtretched, that being almoſt expanded into hydatids, they are at length lacerated, and pour out a part of their fluid.

162. The effuſed fluid will not be taken up by the abſorbents, if it be thick and viſcid; if their mouths, being obſtructed or contracted, oppoſe its entrance; if they labour under atony, and therefore do not promote its propulſion; if any impediment be found on the greater veins and their trunks, ſuch as obſtruction, ſwelling, polypus, compreſſion, great organic injuries, and the like, in conſequence of which the return of the blood to the heart, and therefore the exoneration of the abſorbents into the greater veins, may be retarded, or altogether checked. This, in fact, very frequently appears from the diſſection of dead bodies, in which it has very often been diſcovered, that the cauſe of dropſy, particularly of the cheſt and pericardium, (concerning which we chiefly treat here), was ſome injury in the greater veins about the præcordia, preventing the free return of the fluids to the heart.

163. From theſe remarks (161. 162.) it is eaſily collected how manifold the remote cauſes

of dropſy may be; as intermitting fevers, and other chronic diſeaſes; immoderate evacuations, eſpecially of blood; a taint and obſtruction of the liver, ſpleen, pancreas, and other abdominal viſcera; ſuppreſſion of the perſpiration and urine; exceſſive drinking, eſpecially of cold water when the body is warm *; repelled itch; aſthma; various tumours, particularly indurated glands; aneuriſms; varices; polypous concretions; a malconformation of the cheſt; and other things diſturbing the free circulation of the blood, or its proper mixture and elaboration in the lungs and heart; eſpecially inflammation of the lungs, ſcurvy, &c.

* Morgag. epiſt. xvi. and Hippocr. *Epidem.*

164. After theſe general remarks, we proceed to *hydrothorax*, or dropſy of the cheſt. It was named by Hippocrates Ὑδροθωρος. The ſerous, or watery fluid, is contained in one or other, or in both cavities of the cheſt; or is included in ſome cyſt or ſac, when ſome of the cellular interſtices behind the pleura, or about the lungs and pericardium, or in the mediaſtinum itſelf, are ſo expanded, and receive the watery fluid in ſuch a manner, as to reſemble bladders and ſacs full of water. The firſt is named ſimply *hydrothorax*, or *hydrothorax non ſiccatus*; the latter *encyſted dropſy*, or *ſaccatus*. They are both of them difficultly recogniſable, but the encyſted ſpecies much more ſo.

165. The ſymptoms of ſimple hydrothorax, ac-

cording to Duverney, are as follows *: The greateſt difficulty of breathing; the being capable of lying eaſily on the ſide affected, if only one ſide ſuffer, while it is almoſt impoſſible to lie upon the ſound ſide; the reſpiration being leſs impeded when the neck is raiſed, or the body bent forwards; and, laſtly, the facies hypocratica. To theſe ſymptoms ſome add, œdematous ſwellings of the feet; unquenchable thirſt, or at leaſt dryneſs of the fauces; extenuation of the ſuperior extremities; the urine not correſponding with the quantity of ingeſta, being generally ſcanty, red, thick, and turbid; panting in aſcending an acclivity, or in lying down, or during ſleep, which at night, in particular, is ſo much aggravated, that the patients are obliged to ſtart out of bed, and go to the window to breathe the freſh air; a dry, ſlight cough, which eſpecially accompanies the orthopnœa at night; a ſmall, quick pulſe; a ſenſe of fluctuation in the breaſt, when the patient ſhifts his poſture in bed, or is ſhaken; palpitation of the heart, and the like.

* *Mem. de l'Acad. des Scienc.* edit. Ven. vol. vii. p. 151.

166. It is to be remarked, however, that theſe ſymptoms ſcarcely occur, unleſs when the diſeaſe has advanced pretty far; and that, when they do appear, they are very ambiguous, as De Haën, after Morgagni, has ſhewn *; nay, that the reſpiration itſelf, at firſt, is not much affected, as Zimmerman alſo has remarked †. Feburi agrees

with De Haën, as, in a note on that paſſage of Zimmerman, he declares ‡, that ſometimes hydrothorax is pointed out by no ſymptoms whatever, until the patient be brought to the point of death; and he is ſurpriſed, that in ſuch a caſe no difficulty of breathing took place, unleſs a little before death. But although I am willing to allow, that, for various reaſons, this may ſometimes happen, it is frequently, however, a doubtful point, whether the hydrothorax exiſted previouſly, or ſupervened a ſhort time before death. Hence we muſt not always conclude, that thoſe patients who are reported to have lain freely in any way, and to have enjoyed eaſy reſpiration, were really hydropic; but rather, that they only fell into the complaint towards the cloſe of their exiſtence, in conſequence of which their cheſt, after death, has been found full of water.

* *Rat. med.* † *Trait. de l'exper.* vol. ii. p. 31. ‡ *Ibid.*

167. But Morgagni * is of opinion, that a ſmall, low pulſe, and a dry cough, or one which is nearly ſo, attended with a ſlight catarrhal expectoration, when they occur together, are not ſymptoms of hydrothorax, but rather of ſome other diſeaſe which may be combined with dropſy of the cheſt. Nor does he agree with thoſe who conſider the ſudden interruption of the ſleep, attended with a ſuffocating ſenſation, as a pathognomonic ſymptom †; for Helvich ‡, and De Haën ‖, have proven, by inſtances addu-

ced, that it is often found with other ſymptoms of hydrothorax, and that it is alſo often abſent; and ſubjoins, that this ſymptom is likewiſe common to other diſeaſes of the cheſt, namely, of the lungs, heart, aorta, pericardium, and eſpecially of ſpaſmodic affections of theſe parts, and that, if it can be ever reckoned a pathognomonic ſymptom of hydrothorax, it is then only, according to Vicar, when it has preceded, not followed, œdematous ſwellings of the feet §.

* *De ſed. et cauſſ. morb. epiſt.* xvi. n. 9. et ſeq. † Riverius, *Prax. med.* l. viii. c. v. Carol. Piſo, *De morb. a ſeros. colluv. ort. De hydrop. pector.* ‡ *Ephem. N. C.* cent. 10. obſ. 32. || *Rat. med.* P. v. p. 44. and P. vi. p. 125. § L. c. n. xi.

168. Although, when only one cavity of the cheſt is filled with water, the patient cannot lie upon the ſound ſide, as Duverney (165.) has obſerved, ſtill it ſometimes happens, that he can lie and breathe only upon the ſound ſide. This ſeems to take place chiefly, when the ſide of the lungs which correſponds with the ſide free from water, has become morbidly affected, ſo as to be almoſt incapable of performing reſpiration, and when the lung in the ſide filled with water is ſound, and almoſt alone performs its office. It is not ſurpriſing, therefore, if an hydropic patient lies more eaſily upon the ſide free from water, when the lung, floating in the water, is leſs preſſed upon by its being collected principally towards the mediaſtinum, in conſequence of which

it is more freely expanded for the inſpiration of the air.

169. But if the collection take place in both ſides of the cheſt, though more copiouſly in the one than in the other, what I have juſt pointed out by no means happens. For it is then more convenient, as it appears, to lie upon the ſide which is more affected, and fuller. Sometimes, too, there may be great difficulty of breathing, although the ſerum contained in the thorax be very ſparing, provided it abound with ſalts, or be contaminated with any other kind of acrimony. For in that way the lungs are ſo vellicated and ſtimulated, that the reſpiratory organs are thrown into ſpaſmodic contractions, and the reſpiration is almoſt equally injured as when the lungs are compreſſed with a large collection of water.

170. But, though there be no real pathognomonic ſymptoms of hydrothorax, let it not be imagined, that the complaint can lurk in ſuch a manner as not to admit of detection. For my own part I am of opinion, that we are to truſt neither to one or two ſymptoms, but that we ought to cautiouſly weigh, firſt each of the ſymptoms individually, then all of them together, before pronouncing our judgment concerning the complaint. If, therefore, upon a careful examination at the beginning, many of the ſymptoms, which I have already pointed out as diagnoſtic

marks (165.), be found conjoined, why ſhould the preſence of the complaint be doubted? If, for inſtance, the cauſes of empyema have not been preſent, while thoſe which are known to be capable of inducing hydrothorax, have been preſent; if the reſpiration be difficult, or become panting, or require being performed with the neck raiſed up; if it ſuddenly interrupt the ſleep with a threatening of ſuffocation; if the difficulty of lying on one or other ſide become greater; if ſome fluctuation be perceived in the cavity of the cheſt, though far from the region of the heart; if œdematous ſwellings, eſpecially of the lower extremities, or ſcrotum*; a cough, eſpecially a dry one; thirſt and ſcanty urine be conjoined; if the ſide affected exhibit an œdematous ſwelling externally, which ſometimes happens †; or if the ſcapula and correſponding arm become ſwelled and torpid ‡, which is a more frequent occurrence; there will be no reaſon to require more decided proofs of the preſence of hydrothorax. But the diagnoſis of the encyſted dropſy (164.) is much more difficult, as Tonini ‖ has obſerved it without thirſt, ſcanty urine, œdematous ſwellings of the feet, or great difficulty of breathing.

* Riverius, *De hydrop. pect.* c. i. *Hiſtor. Vratiſl. morb.* 1699, 1700. Hoffman, *De hydrop.* obſ. vii. † Willis, *Pharm. rat.* c. xvii. p. 2. Fontan. *Ob. anat. med.* 30. 38. Buechner, *Act. N. C.* vol. vi. obſ. 30. Morgagni, l. c. l. 2. *De morb. thorac.* ‡ Morgagni, l. c. Carol. Piſo, l. c. ‖ *Atti del Accad. de' Fiſiocrit. de Siena*, vol. ii. p. 232. See an obſervation of Maloet's,

Mem. de l'Acad. Roy. de Paris, vol. vii. p. 171. *edit. Venet.* A ſoldier labouring under *encyſted dropſy of the lungs* was affected with the greateſt difficulty of breathing; a ſlow fever; ſwellings of the arms, hands, legs, and feet; turbid, yellow urine; a troubleſome cough; incapability of lying down, for he was always obliged to ſit; but no fluctuation was preſent.

171. Nor does the *hydrocardia*, or dropſy of the pericardium, more readily appear. It generally occurs when the fluid of the pericardium, with which the heart is lubricated, increaſes ſo much as to derange and impede the action of the heart. Sometimes, however, not an aqueous, but a purulent fluid, is diſcovered in the pericardium, which produces nearly the ſame effect. Hence two kinds of dropſy of the pericardium are noticed by Avenbrugger *, namely, a *watery* and a *purulent* ſpecies. According to him, the purulent differs from the watery ſpecies, becauſe, in the former, the water puts on the appearance of turbid whey, and the matter, which is ſuppoſed to be purulent, adheres to the heart, like fimbriæ. Others, again, deny that this is a real purulent matter, as it has only the appearance of pus. Each ſpecies of the complaint, however, whether the dropſy be aqueous or purulent, betrays itſelf by the ſame marks. Barrere, in his Anatomical Obſervations, although he believes it to be difficult to diſtinguiſh between this diſeaſe and dropſy of the cheſt, mentions that it is accompanied with certain ſymptoms by which its preſence may be certainly pointed out. Such are, a compreſſion and ſenſe of narrowneſs in the fore-

part of the cheſt, where the pericardium is ſituate; the reſpiration being rendered more difficult, in conſequence of the ſwelling of the pericardium; a cough, for the moſt part dry and troubleſome; inordinate motion of the heart; palpitation; ſyncope, ſometimes preceded by a ſenſe of ſuffocation; œdema of the feet; paleneſs of the face; a ſmall, quick, and often irregular pulſe; difficulty of lying down, and a threatening of ſuffocation, occaſionally recurring. But how little reliance is to be placed in theſe ſymptoms, will appear from the obſervations of Morgagni, ſhortly to be adduced.

* Inventum novum ex percuſſione thoracis humani interni pectoris morbi detegendi. *Vindob.*

172. To the ſymptoms mentioned by Barrere (171.), it ſeems proper to add, to make the diagnoſis more complete, a particular ſenſation, as if the heart were immerſed in water, of which, according to the beſt practitioners, the patients commonly complain *. The fact is confirmed by Senac †, who obſerves, that he had not met with a more certain ſymptom of hydrothorax, than a particular undulatory motion between the third, fourth, and fifth ribs, eſpecially felt by the patient, or phyſician, on applying his hand when the heart moves and palpitates. Van Swieten remarks, that this undulation is much more obſcure when the pericardium is intirely full. Such a palpitation, however, accompanied with a ſenſe of undulation and fluctuation, was

neither remarked by Diemerbroeck ‡ in his patients, nor by Barrere, in five perſons labouring under the complaint, whom he attended.

* This was obſerved by Hercules Saxonia, in a Venetian (*Med. pract.* l. ii. c. viii.); and by Raym. Jo. Fortis, in a perſon of ſixty years of age. *Conſil.* cent. ii. conſil. 46. † *Du cœur.* lib. iv. c. v. tom. ii. p. 356. ‡ *Anatom.* l. ii. c. v.

173. I have already ſet down (171.), on the authority of Barrere, palpitation of the heart, among the ſymptoms of dropſy of the pericardium. But Morgagni * denies that it is an uniform ſymptom of this dropſy, affirming that, if ever it appeared, it took place when the fluid with which the pericardium abounds, proves hurtful from its acrimony, irritating and vellicating the heart, or when a polypus of the heart is conjoined with dropſy of the pericardium. Palpitation of the heart, therefore, as it is frequently abſent from this complaint, cannot be a pathognomonic ſymptom of it. Moreover, when the watery fluid is not gradually, but ſuddenly effuſed within the pericardium, and diſtends it greatly, in conſequence of its ſize it preſſes downwards upon the diaphragm, in ſuch a manner, that its appendages being protruded and diſtracted, excite an excruciating pain in the loins. This pain, therefore, might ſeem to belong to dropſy of the pericardium: but neither does this pain uniformly accompany hydrocardia, as Morgagni has ſhewn, in a particular obſervation †.

Laſtly, the ſame learned writer, having collected the obſervations of ſeveral phyſicians, concerning hydrocardia, and weighed them well, concludes, that neither fainting, nor cough, nor difficulty of breathing, are invariably found conjoined with it ‡. For frequently, while the patients are ſilent, or at reſt, they lie with the utmoſt tranquillity in any poſture, but eſpecially with their head down, which has been taken notice of by Franc. Hyppolytus Albertini.

* *Epiſt. anat. med.* xvi. n. 23. † *Ibid.* n. 45. ‡ *Ibid.* n. 46.

174. The *thirſt* alſo, which generally diſtreſſes hydropic patients, is for the moſt part abſent in hydrocardia. But by its abſence dropſy of the pericardium cannot be diſtinguiſhed from hydrothorax, as, in this laſt, the thirſt has ſometimes been found to be wanting. Nor is the œdema of the feet ſo peculiar to hydrothorax, that, by this ſymptom, it can be certainly diſtinguiſhed from hydrocardia. For although, in hydrocardia, the feet very ſeldom ſwell, this does not ſo rarely happen as the cough or thirſt *. But the fluctuation, if it be perceived any where, as ſometimes may happen, affords a ſymptom which is not to be overlooked. We muſt therefore guard, with the utmoſt diligence, againſt any fallacy, or miſtaking the ſymptoms for thoſe of empyema †.

* Morgagni, l. c. n. 46. † *Id.* l. c. n. 24. & 36.

175. Not a few writers of great reputation have perſuaded themſelves, that hydrocardia is indicated by emaciation, lowneſs of ſpirits, ſlow fever,

paleneſs of the face, languor of the eyes, and coldneſs of the extremities, and truſt not a little to theſe marks: but theſe ſymptoms, for the moſt part, are obſerved to be common to other ſpecies of dropſy of the cheſt. Vieuſſens conſiders as a ſymptom of the greateſt importance in this complaint, *a lead colour of the eye-lids and lips*, although it does not always follow dropſy of the pericardium, nor is it always ſeparated from other diſeaſes of the cheſt *. Morgagni alſo conſiders as doubtful ſymptoms of this dropſy, "the weight oppreſſing and conſtricting the heart, or the weight of the heart, and the anxiety of the præcordia," mentioned by Graetz, Albertini, Lanciſi, Hoffman, Fantoni the father, Schreiber, and Fiſcher: firſt, becauſe they are not noticed in the accurate obſervations of Vieuſſens, and by Olaus Borrichi are profeſſedly excluded; and, next, becauſe they were intirely wanting in thoſe caſes which he took from the hiſtory of Valſalva, or which he himſelf enumerated; and if ever they have been obſerved, as it may be found in the works of Gerbez, Bonet, Keller, Reiman, in that caſe not only dropſy of the cheſt, but other diſeaſes alſo, from which theſe ſymptoms might have been derived, were preſent †.

* Morgagni, l. c. n. 47. † *Id. ib.*

176. As hydrocardia, therefore, is frequently conjoined with other diſeaſes of the præcordia, it neceſſarily follows, that it can ſcarce be diſtinguiſhed by any ſymptoms, in conſequence of the marks

of each complaint, or ſometimes of ſeveral being confuſed and oppoſed to each other, as Albertini * appropriately and candidly confeſſes, taught by the obſervations which he had made. Nevertheleſs, he adduces in point ſeveral remarks, confirmed by long and extenſive practice, to eſtabliſh the fact, which it will be attended with advantage to lay before the reader. "If," ſays he, "the dropſy of the pericardium be ſolitary, pure, and ſimple, it may at leaſt in ſome meaſure be pointed out by the pulſe being comparatively ſoft, rather frequent, and generally ſmall †, ſuch as is felt if the heart be flaccid and lax, and the fluid contained in the pericardium be viſcid, ſluggiſh, watery, and inſipid. But if it be acrid and ſaline, in addition to the ſmallneſs and frequency of the pulſe, a vibration and tenſion ſupervene. If, however, it be very abundant, and in ſome meaſure oppreſs the heart, then the pulſe becomes ſmall, quicker, and low. But it is not very intermitting and irregular, unleſs other morbid ſtates of the præcordia be combined with the hydrocardia." He adds: "That there is either no cough, or a gentle and dry one, or one which throws off a lymphatic expectoration, which ſeems to be derived from the ſwelling of the pericardium compreſſing the lungs. Moreover, that the difficulty of lying down, and the neceſſity of frequently ſitting up, ſcarcely ever happens in this diſeaſe, excepting in conſequence of food or drink, emotions of the mind, or mo-

tion of the body, even when the patient only moves himſelf in bed. And although the motion of the heart be increaſed by any moderate change of place, or by walking, approaching to a ſenſe of tremor, while at the ſame time a difficulty of breathing, or rather apnœa, and oppreſſion of the ſternum, are combined with a kind of pain and reſtleſſneſs; that theſe ſymptoms, notwithſtanding, are chiefly, if not intirely, allayed on the patient being compoſed to reſt, providing the fluid of the pericardium be not ſo acrid as to conſtantly rouſe the irritability of the heart, or to have corroded its ſurface." Laſtly, he remarks, that nearly ſimilar ſymptoms take place when the pericardium has become indurated any where, or looſely attached to the heart, as if by means of a membranous ligament.

* *Comment. Acad. Scient. Bonon.* vol. i. p. 389.

† I myſelf have more than once had an opportunity of obſerving ſuch a pulſe in hydrocardia.

177. I muſt not omit to mention, that Daignan differs ſomewhat from Albertini; for he aſſerts, that patients labouring under this complaint cannot with eaſe continue for any length of time in the ſame ſituation, and therefore frequently ſhift it; which, it is probable, happens when the patient is not affected with the pure and ſimple complaint. The ſame author remarks, that they are more or leſs frequently ſeized with ſyncope, according to the diverſity of their poſition in lying; in which reſpect Albertini agrees with him,

who had pointed out that ſymptom before, as having been frequently obſerved by him. If to theſe ſymptoms be added, the *undulation*, of which Senac has made mention, and the ſenſation which the patients experience, as if their heart were floating in water, he does not heſitate concerning the preſence of hydrocardia.

178. Morgagni, who is diſtinguiſhed both for the depth of his medical knowledge, and for his caution and circumſpection in determining ſuch points, affirms that many other things muſt be taken into conſideration. That we may not therefore depart from his admonitions and cautions, if ſymptoms of other diſeaſes of the cheſt, eſpecially of hydrothorax, as a ſenſe of fluctuation far removed from the ſeat of the heart, difficulty of breathing interrupting the ſleep, uneaſy lying on one or other ſide, or the patient being almoſt intirely incapable of doing it, be abſent; if the œdematous ſwellings of the joints, cough, and thirſt, be not preſent at all, or very ſlight; on the other hand, if a certain weight be felt at the region of the heart, and the heart itſelf be oppreſſed by the motion of the body, and ſeem as it were conſtricted, the breathing being in ſome meaſure interrupted; and if theſe ſymptoms, on the body being reſtored to reſt, ſhortly ceaſe, or be diminiſhed, and the breathing be performed more eaſily when the patient lies with his head low; if, I ſay, all or ſeveral of theſe ſymptoms be conjoined, it is conſidered as probable, that

dropſy of the pericardium is preſent (l. c. n. 48.). And this will be rendered ſtill more probable, if the patient feel as if the heart were floating in water, or experience a ſenſation of water fluctuating in the pericardium, and not elſewhere. Nor are the ſymptoms adduced in par. 177. as well as thoſe which, if not always, are certainly ſometimes conjoined with hydrocardia, to be overlooked.

179. Beſides hydrothorax and hydrocardia, the lungs are liable to a ſimilar affection alſo. For when the ſerum or lymph ſtagnates in the cellular texture, by which the veſſels of the lungs are united together, dropſy, or œdema of the lungs, is occaſioned *. Sometimes ſome of the cells, or, according to others, ſome of the lymphatics, become ſo filled with aqueous fluid, and are ſo diſtended, as to exhibit cyſts, or hydatids, of a pellucid colour, or full of variegated matter, by which the lungs are conſequently compreſſed. Each of theſe affections deranges the functions of reſpiration not a little.

* An *ædema* of the lungs, as appearing on diſſection, is recorded by Maloet, in the *Comment. l'Acad. des Scienc. Par.* an. 1732. p. 350.; as alſo by Barrere, *Obſerv. Anat.* p. 109. and by Tozzetti, *Oſſervaz.* p. 83.; by Luca Tozzi, and others.

180. The ſame cauſes as thoſe which induce other kinds of dropſy (161. 162. 163.) occaſion it, eſpecially, however, in children, who are more liable to this diſeaſe, errors in diet, ſuppreſſion of the itch, the meaſles and ſcarlet fever being imperfectly reſolved; and in adults, immo-

derate and hard riding, chloroſis, retiring of œdematous ſwellings of the feet, &c. Dropſy of the lungs may be ſuſpected, if, immediately on all or ſome of the external parts of the body beginning to be affected with an œdematous ſwelling, likewiſe difficult breathing ſhould ſupervene. For a ſmall quantity of ſerum collected in the cells of the lungs impedes the reſpiration more than a greater quantity effuſed into the cavity of the thorax. Our ſuſpicions will be more confirmed, if the face, without ſymptoms of hydrothorax and hydrocardia, become ſwelled; if the feet appear ſlightly œdematous; and if the pulſe become in ſome meaſure ſuppreſſed; as we learn from the obſervations of Albertini and Simſon. It is to be obſerved likewiſe, that a cough, and a certain difficulty of breathing, are ſometimes preſent in this complaint *.

* To theſe ſymptoms it ſeems proper to add, ſuch as we have noticed from Maloet, at the end of par. 170. after note ||, which may illuſtrate the diagnoſis.

PROGNOSIS.

181. FROM a conſideration of the cauſes, if theſe can be diſcovered, the prognoſis is principally to be inferred. If an organic injury have given riſe to the dropſy, it cannot at all be diſcuſſed, or at leaſt with the utmoſt difficulty; and if by chance it be diſcuſſed, it undoubtedly returns. It is likewiſe incurable when it ariſes from the laceration of the lymphatics, or from the rupture

of any branch of the thoracic duct, or from that of hydatids. When it ariſes from the laſt cauſe, it attacks the patient ſuddenly, and frequently with a ſenſe of water dropping, or of ſome rupture *. The more ſcanty the urine is, the leſs hopes of a recovery are there. Sometimes, however, the quantity of urine is a deceitful ſymptom, namely, when the other ſymptoms are not diſcuſſed, or when the reſpiration becomes ſhortly again oppreſſed. When the complaint proceeds from fever, or from immoderate evacuations, it is not eſteemed to be equally dangerous as when it originates from no evident cauſe. Likewiſe the œdema which ariſes as if in conſequence of a depoſition of febrile matter, is not greatly to be apprehended, according to Sydenham †. The œdematous ſwellings and anaſarca, for the moſt part take place from cauſes which are not ſo obſtinate. Sometimes, however, they may be the effects of ſome internal morbid condition, deeply ſeated, which cannot be removed or overcome. The expectoration of blood, which ſupervenes in hydrothorax, moſt frequently is the forerunner of death; for it is the conſequence of eroſion, or great compreſſion of the lungs, or of their veſſels being in a great meaſure obſtructed. With reſpect to the hydrocardia, it is not only full of danger, but of long continuance, and difficultly curable. On the other hand, the œdema of the lungs, if it be

quickly recogniſed, is more eaſily reſolved by a diarrhœa, diſcharge of urine, and anacatharſis.

* Lower, Willis, and Tozzetti, relate ſimilar caſes.

† *Tract. de hydrop.*

THE CURE.

182. THE method of cure in dropſy is manifold; nor is the ſame mode of treatment applicable to every ſpecies of the complaint. Often that which removes one ſpecies, would be highly prejudicial in another. For it has been proven, as Becher alſo affirms *, that dropſies have ſometimes been cured by means of aperients; diuretics; ſudorifics; tonics; purgatives; emetics; hydragogues; cathartics; mercurial ſalivation; dry air, and expoſure to the ſun's rays; the dry and ſpirituous bath; dry meat, and abſtinence from drink; copious drink; narcotics; incraſſants; antiſcorbutics; oily unctions and frictions; the bath; vapours; injections; emollient cataplaſms; bleeding; paracenteſis; ſcarifications; bliſters, and other irritating remedies; the actual cautery; the inoculation of the itch; and, laſtly, merely by the powers of nature. Upon the whole, however, in attempting the cure of dropſy, four indications preſent themſelves; namely, to evacuate the exceſſive quantity of ſerous and lymphatic fluid; to remove the obſtacles to the free circulation; to reſtore its due craſis to the blood; and, laſtly, to ſtrengthen the ſolids. Hence, in leucophlegmatia, anaſarca, and œdematous ſwellings, it is

firſt neceſſary to purge the belly by ſome gentle medicine, as rhubarb; ſenna; Glauber's ſalts, or ſoluble tartar; cryſtals of tartar †; jalap; ſcammony; ſyrup of hartſhorn; and manna; by means of which not only is the ſordes of the *primæ viæ* evacuated, but likewiſe the ſerous colluvies powerfully drawn off. And theſe remedies muſt occaſionally be repeated with caution, and in due quantity, until the ſwelling of the parts appears to intirely ſubſide.

* *Recherch. ſur l'hydrop.* p. 3. † Menghin, in the *Com. Acad. Bonon.* relates ſeveral hiſtories of dropſies, which he clearly removed by the continued employment of cryſtals of tartar.

183. But if lentor and viſcidity of the fluids be likewiſe conjoined with a ſerous colluvies, and if the viſcera and veſſels be interrupted by obſtructions,—inciſive, aperient, and gently diuretic remedies ought to be interpoſed among the cathartics. To this claſs belong chiefly, the lixivial ſalts of wormwood, of the ſtalks of beans, of the leſſer centaury, and of geniſta; likewiſe the neutral ſalts, as vitriolated tartar, ſal polychreſt, ſal ammoniac, nitre, the arcanum duplicatum, the terra foliata tartari; and, laſtly, the ferulaceous gums, as gum-ammoniac, ſagapenum, and galbanum; and the reſinous gums, eſpecially Venice turpentine; which laſt are principally ſerviceable when the languid power of the ſolids requires being excited by a gentle and aromatic ſtimulus. To theſe ought to be added, decoctions of the

five aperient roots, of madder, turmeric, eryngo, ononis, and Virginian ſnake-root, as well as that of our own country; contrayerva, pareira brava, ſaſſafras wood, juniper, maſtich, and the like; the laſt of which, in particular, are admiſſible when the diſeaſe has originated from checked perſpiration. But if repelled itch, or ſuppreſſion of other cuticular diſeaſes, have preceded, remedies prepared from antimony, ſulphur, and vipers, are well adapted to the cure: likewiſe the inoculation or communication of the itch; bliſters; iſſues; and ſo forth. And, in the laſt place, we ought not to omit antiſcorbutic or antivenereal remedies, if the complaint be kept up by ſcurvy, or by a venereal taint. It is to be obſerved, however, that the employment of diuretics, by which anaſarca has been removed, not unfrequently is in a ſhort time ſucceeded by peripneumony, which quickly proves fatal, as we have often unexpectedly found to happen.

184. In the ſpecies of cachexy, or dropſy, which ſucceeds to exceſſive evacuations of blood, or any fluid, we muſt employ bitters, ſtomachics, and ſtrengthening remedies. Of theſe the chief are, wormwood; white horehound; germander; the eupatorium of Meſue; ſouthernwood; orange-bark; that of caſcarilla and cinchona; quaſſy-wood; from which decoctions, extracts, wines, tinctures, powders, electuaries, and pills, are prepared. In particular, chalybs, or ſteel, is celebrated; the employment of which, however,

Geoffroy ſuſpects. Theſe remedies, alſo, ſeem to be proper when the menſtrual or hæmorrhoidal flux have ſtopped, and thus given riſe to the complaint.

185. When the ſerous exceeds the other parts of the blood, or ſeparates from the mixture of them, hydragogues and diuretics ought to be employed with the greateſt caution, leſt, by their diſſolving property, what remains of the red blood ſhould become more and more diſſolved. Laxatives, and reſolving and ſtimulant remedies, for the moſt part are reprobated by Caſimir Medicus *. But when the pulſe and blood are inflammatory, he adviſes the employment of bleeding, and mentions that antiſpaſmodics are not to be diſregarded †. In anaſarca unaccompanied with fever, Baglivi propoſes exciting ſweat by the vapour-bath, and the ſteams of ſpirits of wine, or by bladders filled with an aromatic decoction applied to the body on both ſides ‡. Caſimir Medicus recommends the application of hot cinders, and frictions with oil and common ſalt, accompanied with the internal employment of cryſtals of tartar; for in this manner the ſerum is re-abſorbed into the veſſels, and carried to the urinary paſſages ‖. Others order the application of bliſters to the legs §, nor do they fear any bad conſequence from the employment of them. I find them propoſed in the anaſarca which takes place in pregnant women ¶; becauſe in them

diuretics are conſidered as being almoſt nugatory, if not hurtful; while cathartics, on account of the riſk of inducing abortion, are dangerous; for, in conſequence of the ſwelled ſtate of the uterus, the veins are ſo compreſſed, that the return of the blood through them is retarded, or even prevented, in conſequence of which, either an effuſion of ſerum takes place into the adipoſe cells, or the due abſorption from them (162.) is not performed **.

* *Com. Lipſ.* ſuppl. 2. to decad. p. 221. † *Id ib.* ‡ *Prax. med.* lib. i. c. 13. || *Obſerv. med.* vol. ii. p. 696. § Targ. Tozzetti, *Oſſervaz.* p. 83. ¶ *Com. Lipſ. De reb. in ſcient. nat. et med. geſt.* vol. v. P. iv. p. 648.

** Certain remedies in anaſarca, aſcites, and leucophlegmatia, propoſed by the author, are to be found in Vol. II. par. 92. & 149. which may be conſulted.

186. Beſides bliſters for procuring an outlet to the ſerous humour, inciſions alſo ought to be made in the ſkin. They ought to be formed upon the lower part of the tibia, two inches above the ankle, ſo as to penetrate to the cellular membrane, but not to reach beyond it. But inflammation, pain, and ſometimes even gangrene, are frequently the conſequence of ſuch ſlight wounds. To prevent this accident, they ought to be fomented, as is generally recommended, with a decoction of emollient herbs, to which have been added ſpirits of wine and camphor; or if gangrene be rather apprehended, ſuch a danger muſt be prevented by the employment of antiſeptics and cordials. Fothergill * prefers ſcarifi-

cation, by means of a cupping-glaſs, to inciſions, as being ſafer, and leſs liable to this inconvenience. I myſelf, long before Fothergill had propoſed it, employed this remedy, and thus endeavoured to avoid the ſerious conſequences which are occaſioned by the inciſions. But as every riſk of inflammation and gangrene is not prevented by ſcarification, Lawrence deviſed another remedy, namely, a ſingle inciſion near the ankle, ſmall but deep, to prevent the too great diſcharge of fluids and ſphacelus †. This evacuation alſo may be employed in the caſe of aſcites ‡. For nature has frequently been obſerved to attempt it of her own accord ‖. But after the ſerous colluvies has thus been drawn off, the flaccid and relaxed parts ought to be ſtrengthened by bandages, that freſh fluid may not flow into them, as Van Swieten appropriately ſuggeſts.

* *Com. de reb. in ſcient. nat. et med. geſt.* vol. xviii. p. 396.

† *Diſſert. de hydrop.* p. 49. & 57. ‡ Meade, *Monit. et præc. med.* c. viii. ‖ § 28.

§ It ſeems proper here to ſubjoin the method employed by Tiſſot, which we found among the author's papers. In the firſt place, he diſapproves of the application of cantharides, which are recommended by others, as proving injurious in conſequence of their acrimony. For the acrid humour flowing out irritates the ſkin, and inflames it. Hence the danger of gangrene. I find ſcarifications alſo liable to the ſame objection, eſpecially in a habit with ill-conditioned fluids. He therefore applies to the legs the root of *bryony*, cut into ſmall ſlips, and afterwards ſlightly pounded and heated, which, by the gentle irritation it affords, is capable of drawing off the ſerum. The firſt application brings off nothing, but after twelve hours it is renewed, until the duration of the flow appear certain. *Epiſt. var. arg.* p. 144. 145.

187. Sometimes cathartics (182.), even of the more acrid kind, ſcarce at all excite the bowels. In that caſe the juice of the *iris paluſtris*, taken to the extent of eighty drops, in any ſyrup, every two hours, is ſaid to have drawn off a great quantity of ſerous fluid, and afterwards given in a ſmaller doſe, to have reſtored the patient *. The inſpiſſated juice of the berries of dwarf-elder, without producing acrimony and heat, is reported by ſeveral to have proved ſerviceable, by rouſing all the excretions †. Anaſarca, attended with difficult reſpiration, which at the ſame time indicated œdema of the lungs ‡, when ſucceeding to errors in the diet, or repelled itch, or exceſſive motion, and hard riding, or ſuppreſſion of the menſes, has frequently been cured by Albertini ‖ by means of gentle hydragogues, diuretics, ſteel, viper-ſoup, and occaſionally, which would appear ſtrange to ſome, by bleeding itſelf. And with regard to bleeding, when plethora is ſuſpected to be preſent, and the habit is otherwiſe good, it is frequently neceſſary at the beginning of the diſeaſe, eſpecially in œdematous ſwellings of the feet, or recent anaſarca. The ſafeſt of all kinds of bleeding is that which is obtained from the veins of the anus, by means of leeches.

* *Edinb. med. eſſays*, vol. v. p. 107. † Tiſſot, epiſt. 138.
‡ *Com. act. Scient. Bonon.* vol. i. l. c. ‖ Lieberkuehn forced water collected in the cellular membrane of the lungs to deſcend,

by means of the pediluvium, through the cellular ſubſtance to the legs, and next employed ſtrengthening remedies. Tiſſot, l. c. p. 146.

188. Likewiſe certain external remedies promote the cure. Gentle, long-continued, and gradually increaſed friction, has frequently proved ſerviceable. When the œdema does not depend upon an internal morbid ſtate, but is rather kept up by laxity of the veſſels and cellular membrane, reſolving flours, heated in an oven, a ſand bath, and the powders of diſcuſſing and ſtrengthening herbs, ought to be applied warm. Likewiſe burdock-leaves, applied round the legs, draw out a great quantity of ſerum. But, according to Ludwig, this is perhaps more effectually done by the root of the raphanus ruſticanus, bruiſed and applied to the ſoles of the feet. The legs alſo ought to be ſtrengthened by means of ſtrong linen cloth wrapped hard round, that the fluid may not find acceſs to the tumour. It is proper, however, to guard againſt thoſe things which powerfully diſcuſs or repreſs ſwellings of the feet, if the œdematous ſwellings appear to be ſymptoms of dropſy of the cheſt, abdomen, or of any other internal affection. For the vitiated or abundant humour, when forced to the internal part, is followed with bad conſequences. Hence Hamilton * was of opinion, that the œdematous ſwelling of the feet and hip-joints, which ſupervenes in fevers, ought to be oppoſed by the internal

employment of ſpirit of ſcurvy-graſs. He adminiſtered twenty or thirty drops of this ſpirit in a proper vehicle, occaſionally interpoſing purging of the belly. Lange† recommends ſalt of tartar to the extent of fifteen grains, and ſometimes to a ſcruple, given every day in the morning, for a week, drinking over it an infuſion of bruiſed juniper-berries. Van Swieten ‡ has left us an uſeful caution, namely, that purgatives prove hurtful when the œdematous ſwelling ſupervenes upon intermitting fevers before they are removed; but that friction ‖ proves ſerviceable, and wine prepared with bitters and aromatics. In which reſpect Ludwig agrees with him §.

* *De febr. miliar.* c. ix. † *Miſcel. verit.* faſc. i. p. 68. ‡ § 753. ‖ *Inſt. clin.* § 96. § Tiſſot, in the epiſtle quoted, p. 139. ſays, "That it is no new thing to rub aſcitic patients with oil. The abdomen is rubbed for an hour, morning and evening, with the hand dipped in oil of olives, and a few days afterwards, in conſequence of the patient making water profuſely, the ſwelling ſubſides."

189. Many of the remedies enumerated above (182.) are proper likewiſe in hydrothorax and hydrocardia. In theſe complaints, however, diuretics are more extolled, among which a chief place is held by the pulvis aſellorum, or the juice expreſſed from them; turpentine; balſam of Copaiva, or the peruvian balſam; ſpirit of ſweet ſalt, or nitre; ſquill-root; the wine and oxymel of ſquills; the liquor of the terra foliata tartari; the volatile ſalt of amber; the milk of gum-ammoniac, and the like. It is proper to obſerve, however, that the ſquill-root, as it acts with a

certain cauſtic principle, frequently irritates the delicate ſtructure of the lungs too much, and, as it were, inflames them. On which account Wagner endeavours to in ſome meaſure correct it by the addition of nitre, in the following manner:—Rec. *Rad. ſcill.* ʒ. p. gr. iv. *ad* gr. x. *nitri puriſſimi* gr. viij. *ad* gr. x. *. It is likewiſe corrected, as Lange informs us †, by the flowers of caſſia, mixed with nitre. Others, in order to blunt its poiſonous and acrid nature, add to it the root of *vincetoxicum*; and this is done chiefly by Heiſter, Rahn, and Cattaneus ‡. The oxymel Colchicum is recommended by Störck for the cure of every ſpecies of dropſy, and particularly for hydrothorax and other ſerous diſeaſes, and various cures are related. Of it not more than a drachm or two, or at moſt half an ounce a-day, is at intervals given. Scopulus ‖ mentions, that by means of this oxymel he had cured an old woman of ſixty-five years of age, who had fallen into a dropſy; but that he had employed it without ſucceſs in two other hydropic caſes. Among the diuretic remedies, Sydenham's medicated wine does not rank laſt. It is thus prepared:—Rec. *Ciner. geniſt. lib.* j. *Infund. frigid. in vini Rhenan. lib.* iv. *Add. fol. Abſinth. vulgaris* m. j. *Deinde filtrat. liq. unc.* iij. *dentur bis vel ter in die horis medicis.* For by means of this remedy ſeveral hydropic patients are ſaid to have been reſtored. It appears, however, to be better calculated for the removal of aſcites.

* Regnaudot propoſes a formula ſimilar to that of Wagner againſt anaſarca and other ſpecies of dropſy, which is thus compoſed :—Rec. Rad. ſcillæ recent. p. j. v. gr. ſcrup. iv. Salis de duob. part. iij. v. g. drach. iv. In mortario marmoreo ſubigantur rite ſimul, donec fiat maſſa æqualis. Ex hac f. pil. gr. xij. et ſiccari ſinantur. Doſis n. iv. bis in die. Superbibenda infuſ. plantar. aperient. cum vin. alb. q. s. Serum lactis cum antiſcorbuticis interdiu detur. *Hiſt. de la Soc. Roy. de med.* vol. ii. p. 226.

† *Miſcel. verit.* faſc. 1. p. 66. The dried fruit of the *laurus zeylanica baccis calliculatis*, lately brought to us, are named the *flowers of the caſſia cinnammomea.*

‡ Tiſſot, in the epiſtle quoted, ſays, "That ſquills are a great remedy in dropſy, when given in a doſe ſo as to act on the kidneys (p. 114.). But they prove hurtful by weakening the ſtomach, which is afterwards ſtrengthened by the employment of the bark. In the *ſecond* place, they are an acrid remedy, and excite univerſal pains; nay, they even derange the nerves, which may be prevented by the addition of camphor. In the *third* place, they diſſolve and diſſipate the blood: when, therefore, the fluids are thin, they ought to be employed with caution. Hence frequently the bark ought to be immediately ſubjoined. They prove hurtful when there is an old ſcirrhus conjoined with a ſlight fever, for ulceration is apt to follow (135. 136.). Pure or crude ſquills are to be preferred. Two or three grains of ſquills, beat up with ſugar, prove of the greateſt ſervice in hydrothorax. When heated they loſe much of their ſtrength; they muſt therefore be then given in a greater doſe. The injury done to the ſtomach is prevented by the addition of aromatics. The vinegar of ſquills is an inſufferable remedy. The wine is more powerful, but all do not bear it. The oxymel, in a proper doſe, is inferior to no preparation, particularly when conjoined with nitre, or a neutral ſalt (137. 138.).

‖ *Flora Carniol.* vol. i. p. 266.

190. Petrus Salius Diverſus* ſpeaks clearly concerning dropſy of the lungs and dropſy of the cheſt; and although the more violent cathartics are univerſally reprobated, he mentions that he has himſelf been very ſucceſsful in evacuating the ſerous humours by employing the elaterium and

juice of the roots of elder, perhaps of the dwarf ſpecies. He employed the former to the extent of four grains, and the latter to that of an ounce and a half. He adviſes them, however, to be repeated, becauſe they cannot, by a ſingle evacuation, draw off the whole matter. After drawing off the matter, he recommends inquiring into the cauſe of its generation, that if poſſible it may be removed. In general he propoſes employing cauteries in the arms and thighs, to prevent a relapſe of the diſeaſe †.

* *De affect. part.* c. v. † *Ibid.* p. 223.

191. But it is better immediately to draw off the water, eſpecially if it be recent, or collected in conſequence of the burſting of hydatids, by means of the paracenteſis *. In hydrothorax the puncture is commonly made between the ninth and tenth ribs, five or ſix inches from the ſpine. Hippocrates, as we formerly hinted, uſed to perforate the *diaphyſis*, or body itſelf, of ſome of the ribs, by means of a trepan. But Sharp, an expert Engliſh ſurgeon, is of opinion that it is better performed as formerly, between the ſixth and ſeventh ribs, at an equal diſtance from the ſternum and vertebræ, which place, I find, is likewiſe preferred by Olaus Acrellius †. But he relies little upon this operation, unleſs the ſource of the ſuperabundant ſerum can be ſtopt up. But when there are hopes of a ſucceſsful iſſue, he ſays that we ought to have ſpeedy recourſe to the operation. Moreland mentions the caſe of a pregnant wo-

man labouring under dropsy, from whom seven pounds of limpid water were extracted by an incision made between the sixth and seventh ribs. In consequence of this she fainted; but afterwards did well, and the wound closed within a month. She had a successful delivery at the proper period.

* Lourd (*Journ. de med. mens. Maii*, an. 1782. p. 408.) proposes paracentesis in hydrothorax, as an useful operation, and liable to no danger, providing it be performed in good time, and before any injury has been sustained by the lungs. He thinks that it ought rather to be performed by means of a trocar, than the instrument named in French *bistouri*, if it be introduced with such circumspection, that, immediately on entering the vacuum, and no farther resistance being perceived, it is immediately drawn out again. He confesses, indeed, that it becomes of no avail if the pleura adhere to the lungs; but he does not therefore suppose, that an incision is performed more advantageously, since it is not so easy, as they perhaps affirm, to separate the pleura from the lungs. He mentions its having been in this manner performed repeatedly with success in both sides of the chest. It is performed as follows: A puncture is made four inches under the inferior angle of the shoulder-blade, and five inches from the spine, which place corresponds with the space between the third and fourth false ribs, counting from below. The operation for *empyema* is also performed in the same place. Nor ought the syncope, which sometimes supervenes after the puncture, to deter the practitioner from the operation. Shortly afterwards it intirely ceases. *Ibid.* vol. xxvii. p. 303. This operation has been successfully performed by Hippocrates, Willis, Lower, Bourdelin, Bargeron, Morand, Duverney, Senac, and others.

† *Com. de reb. in scient. nat. et med. gest.* vol. xv. p. 425.

‡ *Transact. Philos.* vol. lvi. p. 302. Martin prefers performing the operation of paracentesis by means of a lancet, rather than a trocar. *Com. Lips.* vol. xv. p. 31.

192. I could wish that the same operation were employed in hydrocardia as in hydrothorax. Riolan observes*: "In it (namely the

pericardium) a large collection of fluid takes place, which induces ſuffocation and overwhelms the heart. If that ſerum cannot be evacuated by means of hydragogues, may we not perforate the ſternum at the diſtance of an inch from the *enſiform cartilage*, as the pericardium is annexed to that part for ſuſpending the heart. A doubtful recovery is ſurely preferable to poſitive deſpair." After Riolan, nearly the ſame method of drawing off the water is recommended by Senac †; but he neither approves of the perforation of the ſternum, nor of the part propoſed. He cauſes a trocar to be introduced between the third and fourth ribs, near the ſternum, ſo as to be paſſed obliquely towards the enſiform cartilage. In this manner the larger blood-veſſels, and other parts which it would be dangerous to wound, are avoided. But whether this puncture has been ever attempted, and what iſſue it has had, I muſt confeſs that I am ignorant. It is to be wiſhed, however, that it were attempted by a ſkilful and experienced ſurgeon, firſt upon the dead, and afterwards upon the living ſubject. Nor would any other method of cure be required in the hydrocardia purulenta which ſucceeds to ſuppuration of the pericardium or heart (171.) †.

* *Enchirid. anat.* lib. iii. c. iv. p. 206. † *De cortur.* l. c.

193. In ſhort, in whatever way the water be extracted by means of the paracenteſis (191. 192.), the greateſt quiet, and the ſpareſt diet, ought to be enjoined for ſome days, that, in con-

ſequence of the motion of the fluids being rendered as gentle as poſſible, the mouths of the veſſels may be enabled to contract themſelves the more eaſily. Strengthening remedies muſt then be employed, the uſe of which is likewiſe neceſſary when the dropſy has been diſcuſſed otherwiſe. Its proper craſis muſt next be reſtored to the blood, and tone to the ſolids (182.). Under this head come peruvian bark and orange peel; caſcarilla; bland aromatics; wormwood; Rheniſh, Burgundy, and red wine; and eſpecially the preparations of iron, the action of which is to be promoted by riding in a carriage or on horſeback, by friction, change of air, travelling, living in the country, hilarity of mind, and the like.

194. The food in general ought to be of a dry kind: hence roaſted fleſh ought to be given in preference to boiled. The bread ought to be toaſted. Pot-herbs which promote a flow of urine ought not to be excluded, as aſparagus, hops, fennel, parſley, parſnips, goats-beard, artichokes, turnips, onions, and leeks. The patient ought to abſtain as much as poſſible from copious drinking; for I have known the moſt obſtinate dropſies cured merely by ſuch abſtinence. Sometimes, however, it cannot be denied, that even copious drinking has been of wonderful ſervice in caſes in which too great denſity and lentor of the fluids have been preſent. Becher recommends copious * drinking, and his tonic

pills. If any wine be allowed, it ought to be medicated with the abſinthium ponticum, or juniper-berries, or millepedes. To allay the thirſt when it is moſt urgent, the mouth and fauces ought to be waſhed with vinegar and water. Acid cherries, ſour prunes, or ſlices of lemon or citron, ſprinkled with ſugar, ought to be kept in the mouth. The air ought to be pure, dry, and elaſtic. Bodily motion in ſimple anaſarca and œdema, particularly when a ſedentary life has occaſioned the complaint, will be proper. But it is hurtful in dropſy of the cheſt or pericardium. A ſea-voyage, however, can prove hurtful to no perſon, and is eaſily borne.

* Milman (*Animadv. de nat. hydrop. ejuſque curatione*, Lond. & Vienn. an. 1779.) ſupports Becher's opinion concerning the uſe of copious drinking in dropſy, which he endeavours to prove to be conformable to the doctrine of Hippocrates. He excludes all kind of watery ſubtility from the cauſes of dropſy, and contends that atony and obſtruction are always the cauſe of the complaint. He doubts whether the flow of humours into the abdomen after the operation of paracenteſis can be prevented by external compreſſion, and is perſuaded that its utility becomes more evident if any part of the water, which is afterwards gradually to be drawn off, be left in the cavity. Hence he approves of the method of extracting the water at intervals, and removes ſeveral objections. His method of cure is this: If the patient be not very weak, he endeavours to diſpel the water by means of purgatives, given every other day, or twice a-week. He gives a powder compoſed of half a drachm of the root of jalap, and ſeven grains of calomel; in the intermediate days he gives a ſaline draught, compoſed as follows:—Rec. Aq. menth. ſimplic. unc. j, aquæ puræ unc. *B*. Sal. tartar. gr. xv. Acet. deſtill. drachm. vj. vel quant. ſatis ad ſalis ſaturationem; aq. piperis Jamaicenſ. drach. j. Syrup. ſimplic. unc. j. M. f. hauſt. To this mixture he added forty drops, or one drachm, of vinegar of ſquills, and it was repeated every ſix hours. Along with the cathar-

tics he gave a decoction of oats and weak broths. But purgatives do not always anſwer, in conſequence of reducing the ſtrength too much; in which caſe he has recourſe to diuretics. Laying aſide the cathartics, he gives a ſaline draught with the vinegar of ſquills, and a great quantity of water, with a little diuretic ſalt, and frequently within the ſpace of forty hours a copious diſcharge of urine takes place. The drink which he recommends conſiſts of half an ounce of cream of tartar diſſolved in two pounds of barley-water, to which has been added ſyrup *ad gratam dulcedinem*, and an ounce or two of brandy. He affirms, that given in this way, together with the ſaline draught, it ſhortly excites a flow of urine, which it does not otherwiſe do, until a long time. A decoction of Virginian ſnake-root is ſufficiently well calculated for exciting the action of the bowels and kidneys.—Rec. Rad. Seneckæ unc. ſemis, aq. feſquilib. Decoq. ad lib. j. cola. Dentur iij. unc. bis vel ter in die. He recommends cathartics at the beginning, and diuretics in the courſe of the diſeaſe.

CHAPTER VI.

Of DIFFICULT RESPIRATION, and particularly of ASTHMA.

195. The natural reſpiration is that which is performed readily and eaſily, almoſt intirely by the diaphragm and a motion of the thorax, which is ſcarcely obſervable; while deranged or difficult reſpiration is that which in any meaſure ſwerves from this. It deviates from its natural ſtate, either in flowneſs or frequency, or in greatneſs or ſmallneſs, or violence, or in the irregular order, number, velocity, and duration, both of the inſpiration and expiration. Hence it is ſaid to be deranged when it is too great or too ſmall; when it is too long or too ſhort; when it is too ſlow or

too quick; when it is too frequent or the reverſe; when it is too violent or too languid; as alſo when it is irregular, inordinate, interrupted, and the like.

196. But paſſing over theſe diſtinctions, which, for the moſt part, are either not diſeaſes, or only ſymptoms of them, we ſhall treat of thoſe injuries of the reſpiration which render it difficult, and which of themſelves reſemble a ſevere diſeaſe. This ſpecies of complaint is diſtinguiſhed into four degrees, as it were, to each of which phyſicians have given a peculiar name. Theſe are, *dyſpnœa*, *aſthma*, *orthopnœa*, and *apnœa*. It is named *dyſpnœa*, when the reſpiration is only ſlightly injured. But when the reſpiration and expiration are more difficultly performed, according to the difference of the manner, and ſeverity of the affection, it is named either *aſthma* or *orthopnœa*. In it frequent reſpiration is conjoined with panting, a hiſſing ſound, and a certain uneaſineſs at the cheſt; but aſthma, for the moſt part, ought to be recurrent and chronic. In it the reſpiration is ſo difficult, that the patient is not only obliged to ſit, and with a great effort to breathe in the erect poſture, but is alſo forced to draw his breath as if ſnoring. Laſtly, if the breathing appear almoſt ſuppreſſed or overcome, while the ſound of the voice is nearly intirely interrupted, accompanied with a ſmall, irregular, ſlow pulſe, anxiety, weight at the cheſt, and ſometimes pain

there, the complaint is then named *apnœa* and *catarrhus ſuffocativus.*

197. In theſe affections (196.) ſome ſuppoſe that the inſpiration only is affected, not the expiration; and that they are, therefore, improperly referred to the reſpiration, which conſiſts of both of them. But in my opinion they labour under a conſiderable error. For it more frequently happens, that the inſpiration is injured, becauſe, as will ſhortly appear, more cauſes occur which prove injurious to the inſpiration than to the expiration. But it cannot be denied, that this laſt alſo, although much leſs frequently, is ſometimes vitiated, or checked, as I ſhall ſhew hereafter. As, therefore, almoſt innumerable circumſtances are required for the proper performance of the reſpiration, as appears from phyſiology, and as ſome are ſubſervient to inſpiration, and others to expiration, whenever any of them ſhall become deficient, the reſpiration alſo will neceſſarily be injured. The cauſes, therefore, of deranged reſpiration, muſt be very numerous; but, to proceed in order, I will firſt begin with thoſe which check the inſpiration, and ſhall afterwards proceed to ſuch as interrupt the expiration.

198. The inſpiration is injured by the air being deficient, either in quantity or quality, or by its being vitiated by means of foreign or noxious vapours *; by the larynx, trachea †, or bronchia becoming indurated, rigid, or ſpaſmodically contracted, or obſtructed, ſtraitened, or compreſſ-

ed, by means of mucus, lymph, pus, ſwelling, abſceſs, polypus ‡, calculi, lumbrici, and other foreign bodies; by the veſicles of the lungs being obſtructed with duſt, hairs, phlegm, blood, or other humours, or by means of ſtony concretions, ſcirrhus, tubercles, vomicæ, abſceſſes, œdema, or any other congeſtion, even bloody; by their being oppreſſed and loaded externally in conſequence of hydrothorax, hydrocardia, empyema, emphyſema ‖, hydatids, tumours of the mediaſtinum and pleura, and dilatations of the heart and auricles, or of the aorta; by the pulmonary veſſels being loaded with a glutinous humour, or with concrete or too viſcid blood; by the intercoſtal muſcles, and others which irritate and dilate the cheſt, being affected with paralyſis or any other diſeaſe, or by their being inflamed and rendered immoveable; by the nerves going to them, being ſimilarly affected; by the diaphragm in like manner being rendered paralytic; by the abdominal viſcera being forced up againſt the ſeptum tranſverſum, or into the cavity of the thorax; by the ſtomach being diſtended with flatus, or the abdomen with water, obſtructing the deſcent of the diaphragm; and, laſtly, by air paſſing into the cavity of the thorax, and becoming expanded, or by any large tumour preventing the dilatation of the lungs §.

* The air, when it is deficient in quantity, or too rare, is incapable of filling the lungs and dilating the thorax. It may alſo

abound with noxious vapours in ſuch a manner as to ſuddenly render the nerves paralytic, and thus induce a palſy of the muſcles raiſing the thorax.

† See Vol. III. Chap. xvii. *Of Angina*, par. 375. 376. 423. et ſeq. ‡ Polypi, ſuch as grow in the noſtrils, frequently beſet the aſpera arteria and bronchia; or are ſometimes even expelled by means of a violent cough. See Waren's obſervations in the *Lond. Med. Tranſ.* vol. i. p. 407.

‖ Haller (*Opuſc. Path.* obſ. ix.) and others, throughout their works have obſerved, that lumbrici have formed a paſſage to themſelves from the fauces into the larynx and aſpera arteria. See Herbin, *Journ. de med.* Nov. 1778, p. 432. § Meckel, in particular, has obſerved difficult reſpiration, and at laſt death itſelf, occaſioned by a collection of air in the right cavity of the thorax; *Mem. de l'Acad. des Scienc. de Berlin*, 1759, p. 42. Such was the quantity and expanſion of the air, that the diaphragm was preſſed down on the right ſide, and the liver protruded all the way to the inteſtinum cæcum. It appeared to him, that the air had paſſed from the lungs into the cavity of the thorax. The ſame author (*Ibid.* p. 44.) found a ſteotomatous tumour, weighing four pounds and three ounces, which adhered to the upper ſurface of the diaphragm, and had diſplaced the pleura, the lobes of the left lung, and the heart itſelf, towards the right ſide, puſhing the ſtomach and ſpleen towards the umbilicus and ilium.

199. The expiration * is diminiſhed or impeded by means of elaſtic air entering into the lungs, and overcoming their contractility; by too great laxity, ſluggiſhneſs, and debility of the lungs; by a bony rigidity of the bronchia, on account of which they not only cannot be dilated, but cannot collapſe and reſtore themſelves; by a ſpaſmodic and involuntary contraction of the intercoſtal muſcles, and others which raiſe the thorax, being too long continued; by a ſpaſm of the diaphragm, in like manner, being too long continued; by a paralyſis or deſtruction of the ſterno-

coſtal and other depreſſing muſcles; by laxity, reſolution, or cutting of the abdominal muſcles, and ſimilar cauſes. The expiration is likewiſe impeded by the diaphragm being drawn down, in conſequence of the increaſed ſize of the liver or ſpleen, which is ſometimes ſo great as to occupy not only the hypochondria, but alſo the hypogaſtrium.

* The external and internal intercoſtal muſcles, which are twenty-two in number, elevate the ribs: but the diaphragm, while it contracts itſelf, is depreſſed. Thus the cavity of the thorax is dilated in breadth and length. But when a full inſpiration is made, or attempted, the dilatation of the thorax is effected by the combined powers of the muſculi ſcaleni, ſterno-maſtoidei, by the poſterior, ſuperior, and anterior ſerrati and pectorales, as alſo by the cervicales deſcendentes, and probably by others inſerted into the thorax, clavicles, and ſcapulæ. By theſe muſcles is inſpiration performed. Expiration, again, is effected by means of the elaſticity and weight of the ribs, by the retaining power of the bronchia and pulmonary veſicles, by the muſcular fibres of the bronchia and aſpera arteria, by the muſculi ſterno-coſtales of Lieutaud, or the triangulares of others, by the abdominal muſcles, and, laſtly, in a violent effort, by means of the longiſſimus dorſi, ſacro-lumbalis, and quadratus lumborum. See Haller, *Elem. phyſ.* vol. iii. lib. viii. ſect. iv. § vi. to xi. likewiſe § xx. to xxiv.

200. Hence it is obvious, that difficult reſpiration is frequently the offspring of other diſeaſes; and that aſthma does not proceed merely from a ſluggiſh and viſcid matter obſtructing the lungs, as was formerly ſuppoſed by ſome, but from almoſt innumerable other cauſes (198.); to which is to be referred the too ſlow motion of the blood from the heart into the arteries; of which kind are relaxation of the ſtructure of the cavi-

ties of the heart; rigidity, or a bony hardneſs of the valves at the mouth of the aorta; the aorta itſelf being too ſmall, or obſtructed by means of a polypus, a tumour *, or other ſuch impediments, either internal or external. For the blood remaining in the pulmonary veſſels oppreſſes and overwhelms the veſicles of the lungs.

* Trombell, a ſurgeon of Bologna, living in the town of Lugo, in the diſtrict of Ferrara, from this cauſe, being ſeized within a few days with great difficulty of breathing, and an intermitting pulſe, was carried off. He had long laboured under orthopnœa, ſlight fainting-fits, and irregularity of the pulſe. His body was diſſected by that excellent phyſician Brunori, who diſcovered at the mouth of the aorta a tumour as large as a pigeon's egg, occupying the membranes, and all the cavity of the artery. From it a few ſpoonfuls of pus were diſcharged. But the lungs were turgid with blood, and ſome effuſion was preſent in the thorax, probably the cauſe of the excruciating pain of the cheſt, with which the patient was diſtreſſed before his death. [The hiſtory has been extracted from a letter ſent by Brunori to Minardi, a phyſician of Fayence, found among the author's papers, which we have thought proper to inſert in this place, *Germ. Edit.*].

201. Difficult reſpiration, therefore, according as it ariſes from morbid ſtates of the lungs or thorax, or from injuries of other diſtant parts, is ſometimes *idiopathic*, ſometimes *ſympathetic*, and, according to the diverſity of its origin, at one time *primary*, at another *ſecondary*, and at other times *ſymptomatic*. But aſthma in particular, on account of its cauſe, is diſtinguiſhed into *humid* or *humoral*, and *dry*, or *convulſive*, *ſpaſmodic*, and *flatulent*. Some alſo divide it into *ſanguineous*, *pituitous*, *purulent*, and *ſcirrhous*; nay, from the

manner of its duration, into *continued*, *fixed*, *periodical*, and *ſhifting*. The *dry* and *convulſive* ſpecies are in general, but improperly, conſidered as being one and the ſame. For any *convulſive* aſthma may happen to be *dry*; but it does not follow that every dry aſthma depends upon convulſion or ſpaſm, if the cauſes enumerated in par. 198. 199. be called to memory.

202. The more remote cauſes which precede aſthma, whether of the humid or dry kind, are plethora in the vigour of life; a ſerous or pituitous colluvies; abundance of mucus and rigidity of the fibres in old people; moiſt and cold air; metallic fumes; and thoſe of ſulphur and arſenic *; the humour of *arthritis*, gout and itch; e matter of ſmall-pox, herpes and ulcers, transferred to the cheſt; ſuppreſſion of the hemorrhoidal and menſtrual flux; acidity of the *primæ viæ*, particularly in hypochondriacs and children; bad-conditioned fluids of any kind †; acrid *ingeſta*, as poiſonous muſhrooms, hemlock, and other plants; preparations of lead; *hyſteria* and *hypochondriaſis* ‡. Laſtly, certain employments, as thoſe of millers, ſtone-cutters, tobacconiſts, ſieve-makers, grain-meaſurers, wool, flax, and cotton carders, and ſuch like.

* The internal membrane of the bronchia is ſo ſenſible, that in conſequence of the inhaling of acrid vapours, the breathing is immediately obſtructed, the muſcular fibres connecting the cartilaginous ſegments of the bronchia being ſpaſmodically conſtricted.

Hence either a fatal peripneumony ſuddenly ariſes, or if the patient eſcape this, an aſthma, which is almoſt incurable, and remains for the reſt of life. Van Swieten, § 824. *Aer, humiditate, etc.*

† Baglivi has remarked, that moſt aſthmas are connected with the ſtomach. *Append. de Aſthmat.*

‡ In ſuch patients aſthma may be induced, in conſequence of the ſtomach being diſtended with wind, or from a ſpaſm of the diaphragm, either on account of its being forced upwards, ſo that it cannot deſcend, or on account of its being ſpaſmodically drawn downwards, in ſuch a manner that it cannot be relaxed and elevated, ſo as to perform the expiration. Felicius, *Del preſag. medic.* p. 166.

THE DIAGNOSIS.

203. Difficult reſpiration (195.) appears of itſelf, and, from what has already been ſaid, various degrees of it may be detected (196.). But the cauſes of the complaint for the moſt part lie hid, or are very obſcure. When the practitioner, therefore, is called to ſuch patients, he ought to inquire carefully, whether the complaint be conſtantly preſent, or return at intervals? Whether it be primary, or the ſymptom of another diſeaſe? Whether the nerves be affected ſo as to give grounds for ſuſpecting the preſence of paralyſis, convulſion, or ſpaſm? Whether the blood be morbid in quantity or quality? Whether there be preſent ſymptoms of hydrothorax, or hydrocardia, of empyema or any organic injury affecting the larynx, *aſpera arteria*, lungs, heart, or great veſſels in its neighbourhood? Laſtly, whether the muſcles of reſpiration be affected, or the thorax, by conſent with other parts, and eſpecially with the abdomen.

204. He muſt next inquire whether the aſthma be moiſt or dry, or convulſive? The moiſt ſpecies is characteriſed by a moiſt cough, a hiſſing ſound, and ſnoring, the diſcharge of ſome fluid being followed with relief. It is alſo ſometimes aggravated, ſometimes mitigated, according as the collection of fluid is either increaſed or diminiſhed; but it never intermits, unleſs when the diſeaſe is completely reſolved. In the *dry aſthma*, either no cough is preſent, or there is one without any expectoration. In the *convulſive* and *ſpaſmodic kind*, there are not wanting ſymptoms of a convulſive nature, and of the nerves being affected either at the beginning of them, or in the courſe of their diſtribution, as in the abdomen; no ſnoring, or at leaſt no hiſſing ſound of the matter, is perceived; there is no excretion of it, or if there be any, as that of thin, frequently voided, and watery urine, it is without relief. The complaint generally ariſes from ſome ſudden cauſe, eſpecially affecting the mind and nerves; and it likewiſe ſuddenly ceaſes, or at leaſt abates, when it is leaſt expected. Moreover, a ſenſe of conſtriction is felt about the region of the diaphragm, as if it were cloſe ſurrounded with a girdle; and the ſleep, if it ſupervene, for the moſt part affords relief, while, on the contrary, the other ſpecies of aſthma are not relieved. But a principal and not unfrequent ſymptom of the convulſive aſthma is, that frequently the greateſt ſmallneſs of the pulſe is

diſcovered, from which ſymptom alone, I have not ſeldom detected the nature of the complaint.

205. The ſymptoms which may be in common to every ſpecies of aſthma, are anxiety of the præcordia, a ſmall, irregular, intermitting, ſlow pulſe, palpitation of the heart, a red, livid, or pale colour of the face, an evening or nightly exacerbation, or an aggravation of the complaint on every motion of the body, an impediment in the ſpeech, coldneſs of the extremities, ſtarting out of bed, and flying to the open windows, violent * agitation of the ſcapulæ, ſhoulders, clavicles, and abdomen, ſtretching of the alæ of the noſe, trembling, the dread of ſuffocation, and the like.

* From this agitation of the abdominal muſcles, probably ariſes the pain of which patients labouring under a ſevere aſthma frequently complain in the abdominal and epigaſtric region.

THE PROGNOSIS.

206. Every difficulty of breathing is attended with danger: which, however, is greater or leſs, according to the degree of violence of the complaint, and the variety of cauſes which may have given riſe to it. The *orthopnæa* is generally attended with moſt danger. Aſthma is generally obſtinate and of frequent recurrence, and although it may ſometimes appear from the beginning to be ſlight, it is for the moſt part the forerunner of hydrothorax, or of ſome other chronic complaint. It is ſcarcely ever cured in advanced

life, eſpecially after having continued long; or it readily paſſes into the *catarrhus ſuffocativus*, and *apnæa*. The converſion of the *dry* into the *humid* complaint, accompanied with an eaſy expectoration of phlegm, is a favourable prognoſtic: while the reverſe is indicated by this change happening with loſs of ſtrength, for it would then afford a proof of the approach of the *catarrhus ſuffocativus*, or that the paſſage of the blood through the lungs will be altogether interrupted. The *convulſive* or *ſpaſmodic aſthma* is a truly acute diſeaſe, and frequently reſiſts the beſt remedies. But it ſeldom proves fatal, unleſs the brain or heart be at the ſame time ſeverely injured. "Patients labouring under aſthma, or cough, who become hunch-backed, are carried off before puberty *. Diſtortion of the ſpine, and difficulty of breathing, are relieved by a flow of blood †. Reſpiration, which cannot be performed but with the neck erect, occaſions dry dropſy ‡."

* Hippoc. *Aph.* 46. ſect. vi. † *Coac. Prænot.* 311. ‡ *Coac.* 424.

207. To this place may be referred this prognoſtic of Hippocrates: "Of thoſe who are ſtrangled, but not yet dead, ſuch as foam at the mouth do not recover *." For ſo great appears to have been the force of the ſuffocation, that during the effort of reſpiring, all the mucus of the fauces and trachea, not being expreſſed and intimately mixed with the air, has paſſed into foam, while the veſſels of the brain, being

either ruptured or enormouſly dilated, have deprived all the nerves, even thoſe immediately ſubſervient to life, of their action. The foam about the mouth will alſo afford a fatal ſymptom, when it denotes commencing putrefaction of the lungs, and the air extricating itſelf from them. Likewiſe the remark of Riverius is worthy of notice, when he obſerves, that ſome perſons liable to ſtrangury, on its diſappearing are frequently attacked with aſthma, and that on its return they are freed from the complaint †. Which may alſo be affirmed of gouty patients. For it very frequently happens, that they are attacked with the greateſt difficulty of breathing, if they remain longer than uſual free from gout; and that they do not recover until the gout returns to their feet or joints.

* Aph. xliii. ſect. 2. † *Prax. med. cap. De Aſthmate.*

THE CURE.

208. THE cure muſt be accommodated to the cauſes. Paſſing over the ſpecies of difficult reſpiration, which are the ſymptoms of other diſeaſes, and the alleviation of which is to be expected from the cure of theſe diſeaſes, I ſhall proceed to thoſe which require a peculiar treatment. If the air, therefore, have occaſioned a difficulty of breathing, it ought to be corrected by artificial means, or a change of it ought to be enjoined. If poiſons or noxious vapours occaſion ſuſpicion, the known acrimony ought to be obviated by remedies oppoſed to it, or the expulſion of them,

if it be practicable, attempted as quickly as poſſible. If the complaint depend upon a paralyſis, or ſpaſm, all the remedies propoſed in chapter viii. Vol. III. concerning convulſive affections, will alſo be proper in this caſe. But particularly when it is the convulſive and ſpaſmodic aſthma, vegetable oil, employed after the manner of an alterative, proves of remarkable ſervice, and likewiſe other things which are emollient and laxative, together with anodynes, as the liquor anodynus mineralis of Hoffman, Homberg's ſedative ſalt, the ſuccinated liquor of hartſhorn, volatile ſalt of amber, camphor, muſk, and opium. A cataplaſm of onions boiled in oil of olives, applied externally, is ſaid by ſome to contribute to relax the ſpaſm of the intercoſtal muſcles. Travelling and changing the air for that which is more ſalubrious, as Baglivi warmly recommends *, are eſpecially proper in this place. In the dry or convulſive aſthma perfumes and vapours are recommended by Louis †.

* *De morb. ſucceſſion.* c. xii. † *Mem. de l'Acad. Roy. de Chir.* vol. v. ann. 1774. p. 549.

209. In the greateſt difficulty of breathing, if it come on ſuddenly, or ſupervene in a ſubject not exhauſted with age and diſeaſe, whatever its cauſe be, it is proper to let blood from a vein in the arm; and ſtill more if plethora, flushing of the face, or the ſuppreſſion of any evacuation, ſeem to require it. Nor ought the practitioner to be deterred from it by a ſmall, obſcure, and con-

tracted pulſe, or by coldneſs of the extremities, if other ſymptoms do not contra-indicate it.

210. Sordes in the *primæ viæ*, when ſymptoms of it appear, and ſeem to keep up the diſeaſe, ought to be expelled by vomiting or purging. Vomiting alſo has the effect of powerfully ſhaking from the lungs whatever be adhering to them. Moreover, in the humid aſthma, the expectoration of the thick and viſcid phlegm is to be promoted by oily, inciſive, and ſaponaceous remedies. In particular are recommended, betony, ſcabioſa, marſhmallows, hyſſop, elecampane, Florentine oris root; ſpermaceti; gum-ammoniac; Venice ſoap; lintſeed oil; honey, oxymel, and vinegar of ſquills; ſyrup of tobacco, and hedge muſtard; millepedes, the infuſion of them, or the expreſſion of them from white wine; volatile alkali; balſamic remedies, and thoſe prepared with turpentine. Likewiſe the flowers of ſulphur are here recommended. Fonſeca * incloſed a ſcruple of the flowers of ſulphur, and the like quantity of the *thus maſculinum*, in the heart of a ſweet apple, hollowed for the purpoſe. Afterwards he cauſed it, when cloſed up, to be roaſted with the ſkin, upon hot cinders, and gave it thus prepared, and deprived of its ſkin, every other day, for eight or ten different times. He likewiſe prepared an electuary in the following manner:—Rec. *Sacchar. diamargariton. frigid. diapenidior. ana unc.* j. *flor. ſulph. pulv. drach.* iij. *mel. deſpum.* q. s. f.

elect. molle. Dos. drach. j. *bis vel ter in die.* If the form of tablets be preferred, they may be prepared as follows:—Rec. *Sacchar. roſat.* unc. j. *flor. ſulph.* drach. j. M. f. s. a. *tabellæ.* But if the fluid obſtructing the lungs appear to be rather ſerous and acrid, than thick and viſcid, in that caſe, beſides oleaginous remedies, mucilages, emulſions, decoctions of barley and hydrogala are preferred.

* *Conſil. med.* lviii.

211. Squill-root is recommended, on account of its inciſive, expectorant, and diuretic property *. Heſſe employed it from three to twelve grains †. Likewiſe white horehound, in the caſe of viſcid and ſluggiſh fluids, proves powerfully inciſive and ſolvent. Some prefer the juice of it, others the powder; ſome recommend the ſyrup, and others the conſerve. But Lange ‡ derived more advantage from the powder of the leaves. The tendereſt extremities of the twigs are ſaid to be better calculated for that purpoſe. The ſmoke of tobacco has been recommended from experience. It draws off the expectoration, and cleanſes the lungs efficaciouſly. In place of it, however, with the ſame view may be ſubſtituted the *achillea montana*, which is ſaid to have frequently been of great ſervice ‖.

* See *Animadv. de ſcilla in adverſ. med. pract.* Ludwig, vol. ii. P. iv. c. 4. p. 695. † *Commerc. litt. Norimb.* an. 1739. hebd. 34. ‡ *Miſcel. verit.* faſc. i. p. 57. ‖ *Mem. dell' Accad. di Parigi.* Edit. Venet. vol. ix. p. 25.

212. All acids ſtimulate the lungs, excite

coughing, prove inciſive, and promote the expectoration. Sometimes, however, the vegetable acids, on account of the admixture of mucous parts, do not operate ſufficiently, eſpecially in old people whoſe ſenſibility has become blunted. Hence Farr, in the aſthma and cough of ſuch people, prefers the employment of foſſil acids, both internally and externally *. But long before him, they were recommended by Floyer †, eſpecially ſpirit of nitre, and water acidulated with the fumes of ſulphur. Cantharides have acquired celebrity from long experience. When applied to the ſkin, as is well known, they not only excite bliſters, from which a fluid is diſcharged, but they likewiſe introduce ſomething into the blood, by which its lentor is attenuated. Hence ſome practitioners employ them repeatedly, and in different parts, that their power may be imparted to the blood. Klaumin, as he relates, by means of them, always reſtored phlegmatic and old people to their former health ‡. They are found to be principally efficacious, however, when a metaſtaſis has given riſe to the diſeaſe.

* *De acid. virib.* p. 123. † Meade, *De imper. ſol. et lun.* p. 19. or 29. ‡ *Ephem. N. C.*; and Crantz, *Mat. med.*

213. When ſuffocation is threatened, beſides bleeding, of which I have already ſpoken, it has frequently been of ſervice to immerſe the feet or hands, as it may be more convenient, in warm water; to employ frictions and cupping-

glaſſes on the limbs, and to inhale the vapour of warm water. On the complaint being overcome, the phyſician's care muſt be directed to prevent its recurrence. With this view, iſſues formed in the arms, thighs, or between the ſhoulders, are employed which are recommended by others beſides Meade *. It is likewiſe neceſſary to correct the blood in various ways; with which view many things may be uſed, but eſpecially whey and milk; the ſoups of frogs, ſnails, and vipers †; the juices of cooling and antiſcorbutic herbs; the decoctions of the woods; the hot bath; the cold bath; riding on horſeback, or in a carriage; paſſing into the pure air of the country. For the good effects ſaid to ariſe from the exhalations ſent forth by the earth broken by the plough, or from ſulphureous pits, although they do not reſt upon certain experiments, do not ſeem altogether to be deſpiſed. Such remedies, therefore, according to the diverſity of the cauſes, may be employed to prevent the recurrence of the diſeaſe; to which, alſo, if a proper dietetic regimen be added, there will be the greater certainty of keeping off the complaint.

* *Monit. et præcept. med.* c. v.

† See par. 142. in note Vol. III. for in that paſſage the uſe of viper-ſoup is defended by the author, at conſiderable length, againſt certain perſons who had called its efficacy in queſtion. [*Germ. Editor.*]

214. Hanged or drowned perſons attain the

higheſt degree of apnœa. Theſe, however, provided they be not completely dead, may ſometimes be reſtored to life. It may not be amiſs, therefore, to point out their proper treatment. Their body ought to be vigorouſly rubbed all over, and for a long time; the veins of the arm or neck ſhould be opened, in order that ſome ounces of blood may flow; dry cupping-glaſſes are to be applied; acrid clyſters adminiſtered; the ſmoke of tobacco *, or air, muſt be thrown in by the mouth (the noſtrils being ſtopt to prevent its return), and by the anus; acrid ſubſtances muſt be put into the noſtrils, and the mouth fomented with warm wine. In the caſe of hanged perſons, the neck ought to be chafed with oil and warm wine; but drowned perſons require being fomented with a uniform and temperate heat. It has ſometimes been attended with advantage to cover the whole body with hot aſhes or ſand. Nor muſt I omit mentioning the treatment of ſuch perſons as have undergone ſuffocation, or apparent death, in conſequence of certain poiſonous vapours or fumes, as thoſe of charcoal, of common ſewers, and other kinds of mephitis. They muſt be removed as quickly as poſſible into the open and cold air, with their head elevated, and their mouth opened wide; they muſt be ſprinkled with cold water, and the recovery attempted nearly in the ſame manner as in the caſe of perſons whoſe animation has been ſuſpended

by ſubmerſion or ſtrangulation. Afterwards, according to circumſtances, other exciting, revellent, and evacuant remedies ought to be employed.

* I have lately learned from Pratolong an inſtance of a drowned perſon having been, by his advice, for the firſt time recovered, at Genoa, an. 1777, by the ſmoke of tobacco being thrown up his anus.

† Carminati, *De animal. ex mephit. et noxiis halitibus interitu.*

CHAPTER VII.

CONCERNING FAINTING.

215. When the vital and animal functions are impaired in ſuch a manner, that a perſon ſuddenly feels himſelf deprived of ſtrength, becomes pale and cold, while the pulſation of the artery ceaſes, and the patient appears like one about to die, or already dead, he is then ſaid to be in a ſtate of *ſyncope*. But as there are various degrees of this affection, it will not be improper to enumerate them. The ſlighteſt of all is that which is named Ελκυσις, or loſs of ſtrength, from Εκλυω, *exſolvo*. This is followed by λειποθυμια *, or *animi deliquium*. *Syncope* is a ſtill more ſevere degree of the complaint: it is a Greek term, which has prevailed in medicine ever ſince the days of Galen, and ſignifies a ſudden and complete deprivation of the ſtrength, from κοπτω,

ſcindo. Laſtly, the moſt ſevere of them all is the ſyncope conjoined with *aſphyxia* †, or ceſſation of the pulſe all over the body. We ſhall ſpeak, however, more particularly of *aſphyxia* in the following chapter, as, in my opinion, it is not properly referred to fainting. For generally in *aſphyxia*, ſenſe, motion, and heat remain, which is by no means the caſe in the ſevere ſyncope.

* The ſynonyms are *lipothymia*, *lipopſychia*, and *apopſychia*, from λειπω, *derelinquo*, and θυμος, *animus*, or ψυχη, *anima*.

216. The proximate cauſe of the complaint appears to be impaired motion of the heart and blood, or its being more or leſs interrupted. For when the motion of the heart becomes languid or ſuſpended, a languor or ſuſpenſion of both the vital and animal functions takes place; in which I have mentioned the nature of fainting to conſiſt. The prediſpoſing cauſes are, ſudden and violent emotions of mind; pungent odours; ſevere pains in ſome parts *; both violent ſpaſm and paralyſis of the heart †; compreſſion, or irritation, of the nerves of the heart ‡; convulſions beginning in the brain, or elſewhere, and propagated to the heart itſelf; ſmall bones in the falciform proceſs, preſſing upon, irritating, and puncturing the brain, of ſuch kind, and placed in ſuch a ſituation, as may convulſe and benumb the nerves going to the heart, or which conſent with it ‖; exceſſive evacuations of all kinds; poiſons; malignant and peſti-

lential fevers; the warm bath; the ſudden tranſition from a cool to a warm place, or from a warm to a cold one; plethora, both real and apparent; the return of the blood to the heart being impeded, or increaſed reſiſtance to the propelling power of the heart; vitiated fluids; acrimony and other depraved ſtates of the blood; irritation of the ſtomach, particularly of the pylorus; putrid, acid, alkaleſcent crudities in the *primæ viæ*; a bilious colluvies; worms of all kinds, particularly the round and tape worm; hyſteria and hypochondriaſis; and, laſtly, a morbid ſtructure, and vitiated ſtates of the heart and neighbouring parts.

* Senac, *Du coeur*. l. iv. † Morgag. *Epiſt. anat.* xxiv. n. 13. ‡ *Id. ib.* n. 5. ‖ *Id. ib.* n. 6. 7.

217. Among theſe a chief rank is aſſigned by Albertini and Morgagni to the dilatation of the vena cava and right auricle of the heart, eſpecially if at the ſame time the beginning of the nerves, or the nerves of the heart, be affected idiopathically or ſympathetically *; and the next to polypi of the right and left ventricle of the heart, eſpecially when an effuſion of ſerum into the cavities of the brain takes place at the ſame time †, or when the heart is ulcerated ‡, in which caſe a pain likewiſe is for the moſt part felt in its region ‖; likewiſe to preternatural expanſion and dilatation of the aorta and pulmonary artery. For in that caſe the heart requires a greater effort

to propel the blood through the arteries, as its propulſion is by no means ſupported by the ſyſtole of the arteries. But if at the ſame time the brain happen to be compreſſed with water, or in any other way, the languid action of the heart will neceſſarily the more readily yield to the reſiſtance of the blood §.

* *Epiſt. anat. med.* xxv. n. 3. † *Id. ib.* n. 4. ‡ *Id. ib.* n. 17. 20. 21. 22. ‖ *Id. ib.* n. 11.

§ Carcaſſon obſerved a *cancerous ulcer of the heart*, accompanied with *lipothymia* and *ſyncope*. The hiſtory of the caſe, as it is recorded in the *Hiſt. de la Soc. Roy. de Med.* &c. vol. ii. p. 252. is as follows. A girl of twenty-two years of age, labouring under lues venerea, was cured by the rubbing in of mercury. She was relieved of all her complaints. There only remained a kind of weight in the inſide of the cheſt, oppoſite to the left breaſt, between the fifth and ſixth true ribs; of which ſhe complained before employing the mercury. For five or ſix months after completing the mercurial courſe ſhe conſtantly complained of the ſame weight; but, in addition to it, a pungent pain at the ſame part, from the centre of the breaſt to the middle of the ſternum of the ſame ſide, had come on. She compared this pain to the pricking of a needle. For a year afterwards ſhe continued to be affected with a voracious appetite, accompanied with *lientery*. The pulſe was ſmall, frequent, and intermitting. During the ſevere pains it ceaſed for a few ſeconds. Frequent fits of *lipothymia* and ſyncope occurred. In the courſe of the complaint ſhe could not ſleep, unleſs in the erect poſture, inclining ſomewhat backwards upon the left ſide, or upon the fore-part of the cheſt. The pain, which continued for two years, increaſed gradually. The attacks of ſyncope became more frequent; and ſhe likewiſe complained more, eſpecially towards the cloſe of her life. A year before her death the morbid appetite was ſucceeded by loathing of food. On diſſection an ulcer appeared, &c.

218. Nor, perhaps, is it far from the truth to ſuppoſe, that ſometimes air evolved, and diſtending the cavities of the heart, is the reaſon why,

its ſyſtole being impeded, ſyncope follows, as was obſerved by Graetz *, according to Morgagni †. Likewiſe dropſy of the pericardium, or any connection of it with the heart, has ſometimes been obſerved to impede the motion of the latter ‡; whether that takes place in conſequence of its fibres becoming ſoft and enervated by the ſurrounding water, or becauſe, in conſequence of the compreſſion and weight, the heart is ſo bound, that it cannot freely dilate itſelf. Whatever, in ſhort, whether immediately or remotely, may check or repreſs the motion of the heart, will act as a remote cauſe. A fatal ſyncope is likewiſe ſuddenly induced by rupture of the heart. Ludwig || adduces an inſtance of the right auricle of the heart having been burſt by an external blow, and occaſioning ſudden death. Likewiſe Langhans § has obſerved the left auricle of the heart burſt by means of a polypus contained within it; and Dietericus Mummſenius ¶ of Hamburgh mentions its having become corrupted from the ſame cauſe.

* *Diſſertat. de hydrop. pericard. in proem.* † L. c. n. 13. ‡ *Id. ib.* n. 15. 16. || *Adverſ. med.* Par. i. p. 234. § *Act. Helvet.* vol. ii. ¶ *Diſſert. inaug. De corde rupto*, Lipſ. 1764.

DIAGNOSIS.

219. THE *eclyſis*, or threatening of lipothymia, is preceded by confuſion of the head, heavineſs, and vertigo; by dimneſs of ſight; by paleneſs of the face and lips; coldneſs of the extremities;

loſs of ſtrength; ſweat breaking out on the forehead and neck; anxiety of the præcordia; a ſmall, weak, frequent, variable, and ſuddenly changeable pulſe: all of which ſymptoms are aggravated upon the actual commencement of lipothymia. In *ſyncope*, however, there is a ſudden and total loſs of ſtrength; the reſpiration becomes obſcure; the pulſe extremely ſmall, or altogether ſuppreſſed; the face turns pale and livid; the whole body is bedewed with a cold ſweat, and itſelf feels cold; the patients neither ſee, hear, nor ſpeak, but fall down; their limbs become relaxed, as if by paralyſis; ſometimes they are ſpaſmodically convulſed; the noſtrils become ſharp; the eyes hollow and inverted; the temples ſink; and, if the ſyncope attain its height, which ſome name *aſphyxia*, the face likewiſe becomes greeniſh.

220. Beſides, ſyncope differs from apoplexy by the pulſe, reſpiration, and colour of the face, which in general in apoplexy are preſerved, or are ſometimes even increaſed; while in ſyncope they are deficient. It likewiſe differs from epilepſy, becauſe, in the latter, all the limbs are alternately convulſed, but do not become motionleſs, and the patient foams at the mouth. Laſtly, it differs from the hyſterical ſuffocation, becauſe, in the latter, the reſpiration frequently ſeems to ceaſe, though not the pulſe, unleſs ſyncope happen to be conjoined with it. Lipothymia and ſyncope are ſubject to the ſame varieties as other complaints. Hence it is named *primary*, *ſeconda-*

ry, ſymptomatic, hyſterical, convulſive, and *idiopathic.* That ſpecies which depends upon organic injuries of the heart itſelf, or neighbouring parts, has obtained the peculiar name of *ſyncope cardiaca.*

PROGNOSIS.

221. "Thoſe who are frequently ſubject to ſevere fainting-fits, without any manifeſt cauſe, are ſuddenly cut off *." For they ſeem to labour under a polypus, or aneuriſm, or other organic injury, by which the motion of the heart and blood is at length completely interrupted. Frequently, alſo, the ſudden burſting of the heart, or its veſſels, and the rapid effuſion of blood into the cavity of the pericardium or thorax, proves a cauſe of ſudden death. "If convulſions and fainting ſupervene on the menſtrual flux, it is a bad ſign †." For convulſions proceeding from inanition, generally prove fatal; nor can the heart, when a ſufficient quantity of blood is not preſent, renew its motion. But the diverſity of the cauſes likewiſe occaſions a diverſity in the prognoſis.

* Hippocr. aph. 41. ſect. 2. † Aph. 50. ſect. 5.

THE CURE.

222. THE cure is twofold, either that adapted to the paroxyſm, as it is called, or that which is employed out of it. In the paroxyſm the motion of the blood and heart muſt immediately be excited. The face, therefore, ought to be inſtantly

ſprinkled with cold water. For when the fibres are contracted with cold, the blood is propelled through the veins into the heart, and revives its motion. In this manner alſo is the nervous influence excited, ſo as to call into action the irritability of the heart. The ſame effect is produced by volatile remedies applied to the noſe, as the ſpirit of balm, and Hungary water; the moſt acrid vinegar; volatile ſalts; ſpirit of ſal ammoniac, urine, and hartſhorn; and oil of amber. We muſt guard againſt hurting the patient, however, by ſtrong odours, or ſternutatories. For there are ſome perſons who can by no means bear them, whether they be agreeable or otherwiſe, or who are thrown into convulſions by them, which, in the caſe of the hyſterical or convulſive lipothymia, is attended with material injury. Vinegar and volatile ſalts are borne almoſt by every perſon. Likewiſe the moſt generous wine, ſpirit of balm, the *confectio alkermes*, and volatile ſalts, or various mixtures of theſe, may be employed with caution internally at proper intervals. But we muſt be guarded in our employment of cordials when the ſyncope has ſucceeded to an hemorrhage, for the liberal employment of them, by exciting the *vis vitæ* too much, would be apt to renew the hemorrhage.

223. If the complaint ariſe from malignant and poiſonous cauſes, it muſt be oppoſed by means of alexipharmacs and antitodes, ſuch as theriac, contrayerva, virginian ſnake-root, wine, peru-

vian bark, eſpecially if the *lipothymia* or *ſyncope* be a ſymptom of a dangerous fever. Caſtor oil, camphor, and other antihyſterical remedies are proper, if it proceed from the uterus; but if from the ſtomach and inteſtines, thoſe remedies are to be employed which remove or correct the cauſe. Violent pain requires ſedative and anodyne means; and plethora, polypus, aneuriſm, or terror, indicate bleeding. Nor ought friction, dry cupping-glaſſes, and acrid clyſters to be omitted, when the complaint is of long ſtanding; and the other revellents are not ſuperfluous, if it be ſuſpected that the brain is primarily affected.

224. When the paroxyſm is not preſent, the cauſes muſt be completely removed to prevent the recurrence of the complaint. In general, cordial, reſtorative, and volatile remedies are recommended, as exciting the blood and heart, repairing the fluids, or, if it be neceſſary, reſolving them. To which object the regimen, with reſpect to the patient's living, ought to be intirely directed.

CHAPTER VIII.

OF ASPHYXIA,—AND TWO MORBID STATES OF THE PULSE, ALLIED TO IT.

225. *Aſphyxia*, as I have already obſerved, is a ceſſation of the pulſe, of ſuch a nature, that the arteries no where throughout the body, at leaſt

to the touch, appear to move. It is received in this ſenſe by Galen, and others who have followed his footſteps *. But, as in ſevere ſyncope, the pulſe is frequently obſerved to be abſent, ſome, but eſpecially ſuch as derive the pulſation of the arteries from the ſyſtole of the heart, have conjoined aſphyxia with ſyncope in ſuch a manner as to hold it to be as it were the higheſt degree of that diſeaſe. It is not ſurpriſing, therefore, that Sauvages has comprehended *apparent deaths* under the ſingle name of *aſphyxia*, though he be oppoſed by the authority, particularly of Lanciſi, who, in his book—*De ſubitaneis mortibus*, —names perſons labouring under ſuch a ſyncope, not *aſphyctici*, but *pſeudomortui*.

* Galen, l. i. *De præſag. ex pulſib.* c. ii. & l. i. *De differ. pulſ.* c. 3. *Bonet. Medicin. Septentrion.* T. i. l. ii. ſect. xxi. c. 2. *et ſepulchret.* T. i. l. 2. ſect. ix. *Obſ.* i. iv. vii. xlv. ex Bartholin *De lact. theor.* c. 14.

226. Sauvages is alſo oppoſed by Morgagni, who aſſerts that aſphyxia is preſent when the pulſe is ſo much diminiſhed that it can no longer be felt; and adds, that the patients ſtill retain their ſenſes, ſpeak, and move, and that they do not become perfectly cold; in which reſpect they moſt evidently differ from perſons in a ſtate of ſyncope, and apparent death *. He inconteſtibly proves this opinion concerning aſphyxia, not ſo much by the obſervations inſerted in the *Sepulchretum* of Bonet, or taken from the papers of Valſalva, as by ſeveral of his own, and not a few of others, collected from diffe-

rent quarters. For he in the ſame place mentions † *aſphyxiæ*, not to ſay of one or two days, but of much longer continuance, ſuch as have been prolonged for upwards of forty days, or even for four months, without the reſpiration, power of ſpeech, ſenſation, motion, ſtrength, or heat being abſent ‡. Moreover, in the *Adverſaria* ‖, he not only quotes from Ballonius §, an inſtance of an *aſphyxia*, which continued for fourteen days before death, but likewiſe two caſes from Riolan ¶, of perſons who lived for ſixteen years without any pulſe; a ſimilar caſe to which Ronſæus mentions having ſeen **. "For the patients retain the uſe of their internal and external ſenſes ſufficiently, they ſpeak with eaſe, they turn themſelves from ſide to ſide ††; ſome even raiſe themſelves readily ‡‡; and, as our countryman Ramazzini has obſerved ‖‖, a young Jew, whoſe pulſation all over the body had ceaſed for four days, was ſo robuſt and active, that on the very day of his death he roſe out of bed, and dreſſed himſelf §§." Hence he very properly concludes, "that aſphyxia may exiſt without ſyncope, but that the latter cannot be without the former ¶¶."

* *Ep. Anat. med.* xxiv. n. i. ix. † N. viii. ix.

‡ Haller's obſervations confirm the fact, vol. iii. *Oper. minor.* p. 306. Ramazzini. *Conſtit. Epid.* an. 1692. 93. 94. § 23. Schenck, vol. ii. Berryat, *Mem. de l'Acad. Roy. des ſcienc. de Paris*, an. 1748. p. 58. and *Com. Lipſ.* vol. ii. p. iv. p. 578.

‖ Fernelius mentions an *aſphyxia* of twenty-four hours having been cured, and it is confirmed by Ramazzini, *Conſtit. Epid.* § 33. Bartholin (*Cent.* iv. obſ. 42.) mentions inſtances of perſons having recovered after an *aſphyxia* of ſix days.

§ *Adverſ.* 11. animad. 44. ¶ *Epid.* 11. ** *Enchir. Anat.* l. v. c. 46. †† Morgagni, cit. epiſt. xxiv. ‡‡ *Ibid.* n. 2. ||||| *Ibid.* n. 6. §§ L. c. n. 9. ¶¶ Epiſt. xxv. n. 1.

227. Such is the deſcription of the real aſphyxia. But there are other ſpecies of the complaint which with De Haën we name *ſpurious* *. Such are the *aſphyxies* obſerved in one or other, or both arms; while in the mean time the other arteries, as thoſe of the temple, the carotid, crural, and arteries elſewhere, beat as uſual. But theſe partial aſphyxies ariſe either from the arteries being uncommonly deep-ſeated, or from their being covered with too much fat; or from ſome variety in their diſtribution, or from unuſual ſmallneſs; or from compreſſion, or obſtruction, or ſpaſmodic conſtriction of the ſubclavian †, axillary, or humeral arteries. Among them ought to be ranked the aſphyxia, which, towards the end of moſt diſeaſes, ſupervenes in conſequence of languor, and loſs of all the powers of the ſyſtem, particularly of thoſe named *vital*. For it does not happen in this, as in the real aſphyxia, that motion, ſpeech, ſenſe, the complexion and heat, are equally retained.

* *Rat. Med.* T. xii. c. 2. p. 42.

† Congeſtion, induration, and ſwelling of the lungs, compreſs the *ſubclavian* and other arteries.

228. As the origin of the *ſpurious aſphyxiæ* is not very obſcure, ſo the explanation of it does not ſeem difficult. This is not the caſe, how-

ever, of the *genuine aſphyxiæ*. For little light has been thrown upon this complaint from anatomical diſſection. It is probable, however, that the ſame cauſes which induce lipothymia and ſyncope (216. 217. 218.) here alſo have a place, but milder in degree. Among theſe, rigidity of the arteries ſeems to be a very probable cauſe, in conſequence of which it happens, that they admit the blood, but cannot be diſtended, and contract themſelves. And this can be affirmed more confidently of that ſpecies which is accompanied with a degree of languor of the whole body, as well as of the mind. But how will ſuch cauſes apply properly to the long-continued aſphyxia which conſtantly preſerves the functions of the mind intire, and the action of the muſcles vigorous? Why, on the motion of the arteries, the pulſation of which can be felt, ceaſing, do not the other motions alſo, and the other functions, as in ſyncope, become quieſcent? Probably in aſphyxia the heart and great veſſels around it ſtill move in ſuch a manner, that the circulation of the blood is continued through the lungs and brain. But in parts remote from the heart, heat and life cannot long remain, unleſs it be ſuppoſed, that in theſe alſo ſome motion, though a gentle one, of the fluids, ſtill remains. While the motion of the heart and blood, therefore, in whatever manner, is kept up, does merely the ſyſtole of the arteries ceaſe, through the fault of the nerves going to them? Many arguments, deri-

ved from the moſt accurate obſervations, ſeem to demonſtrate, that the motion of the arteries does not proceed merely from the action of the heart *. But, leaving the diſcuſſion of a point involved in ſuch difficulties, concerning which neither Morgagni nor De Haën could draw any certain concluſion, it is better to mention ſomething of the cauſes, which anatomical diſſection has diſcovered in the bodies of thoſe who have died of aſphyxia.

* This is demonſtrated by the obſervations of Rhodius, Lanciſi, Morgagni, De Haen, Zimmerman, Barthez, and others.

229. De Haën ſays *, "That on diſſection of many who have died of aſphyxia, the heart and auricles are found flaccid and dilated; that in others grumous blood is detected, and that ſometimes many other injuries of the the vital viſcera are diſcovered; that it is obvious that ſome of theſe morbid ſtates give origin to aſphyxia; but that the explanation of the fact is hitherto imperfect and uncertain, as the ſame cauſes have not been diſcovered in all ſubjects; as theſe cauſes have not given riſe to aſphyxia in others; as the cauſes, of whatever kind, already enumerated, have produced very different diſeaſes; and, laſtly, as the wonderful, but obſcure doctrine concerning the nerves, has proven, that, without any veſtige of vital diſeaſes being diſcovered on diſſection, theſe may be excited and perpetuated by the nerves alone."

* *Rat. med.* vol. xii. p. 49.

230. From the anatomical reſearches of Morgagni we may certainly infer, that aſphyxia ſometimes ariſes, not ſo much from the pericardium adhering to the heart by membranous ligaments, as from the external membrane of the heart itſelf being indurated and thickened, preventing the heart from freely dilating itſelf *, eſpecially when the pericardium at the ſame time abounds with water or pus; as alſo from polypi in the heart, or at the beginning of the aorta †; or from ſerum collected in the ventricles of the brain, and affecting the cerebellum; or from abſceſſes and other morbid ſtates of the cerebellum, injuring the nerves going to the heart or arteries. Nor can we exclude from the cauſes of aſphyxia, a colluvies in the *primæ viæ*, and hyſterical and convulſive affections.

* *Epiſt. anat. med.* xxix. n. 3. † *Ibid.* n. 7.

231. After aſphyxia follow two other morbid ſtates of the pulſe, namely, extreme *ſmallneſs* of it, conjoined with *weakneſs*, and an occaſional deficiency of it, which is named an intermitting pulſe. And firſt, with regard to the former, it is either natural, and does not then portend any bad conſequence; or it proceeds from diſeaſe *, as from extreme flaccidity and atony of the fibres of the heart †, from increaſed bulk of the heart, conjoined with extreme thinneſs and weakneſs of its ſides,—in conſequence of which it cannot

expel the blood with the requiſite force,—or with water contained in the pericardium, either relaxing or compreſſing the heart. For the heart, when increaſed without theſe, occaſions a great, vibrating, and violent pulſe. But the water contained in the pericardium, if it be acrid, adds quickneſs, and ſometimes hardneſs, to it.

* Morgagn. epiſt. xi. n. 13. epiſt. xxi. n. 49. et xxx. n. 15.

232. The entrance of the blood alſo into the arteries is diminiſhed by the *ſemilunar valves* at the mouth of the aorta having become indurated, cartilaginous, or oſſeous. Hence the ſmall weak pulſe may be eaſily underſtood to be derived; which is moreover obſerved in thoſe perſons, in whoſe heart the *coronary veſſels*, or arteries proceeding from the aorta, have acquired a bony hardneſs *. Likewiſe ſympathy propagated from the lower part of the abdomen †, from a putrid or acrid colluvies there, or from the uterus to the heart and its nerves; paralyſis of theſe nerves; deficiency of the blood; too ſmall capacity of the arteries; a languid ſyſtole; and diminiſhed irritability, beget a weak and ſmall pulſe.

* Morgagn. *ibid.* n. 19. † *Id. ib.* n. 20.

233 Likewiſe a weak and ſmall pulſe will be occaſioned by the pericardium being cloſely united with the heart. In conſequence of which, as the heart can neither expand nor contract itſelf ſufficiently, there is no wonder that the pulſe becomes weak. Such was it obſerved by Peyer,

Lower, and Morgagni; but there ought to be preſent at the ſame time, either a deficient quantity of blood; or languid action of the heart; or great reſiſtance of the arteries, as rigidity, hardneſs, and narrow diameter, or a ſpaſmodic contraction; or ſuch fulneſs that the arteries cannot contract themſelves vigorouſly. Otherwiſe the pulſe might be quick and violent, as Dionyſius, Freind, and Lafay * mention it.

* Morgagn. epiſt. xxiv. n. 12.

234. I ſhall now proceed to ſay ſomething concerning the *intermitting pulſe*. An intermitting pulſe may be conſidered as a *very ſhort aſphyxia*. For what elſe is *actual aſphyxia* but an intermiſſion of the pulſe remaining for a great length of time? But intermiſſion of the pulſe rarely occurs by itſelf as a diſeaſe; it is frequently a ſymptom of other affections, to aſcertain which, a pretty full diſcuſſion of its nature and cauſes will not a little contribute.

235. We ſay that the pulſe intermits when the diaſtole of the arteries ceaſes at intervals, and cannot be felt. For, were the ceſſation of the pulſe of long continuance, it would not be named *intermiſſion of the pulſe*, but *aſphyxia*. The diaſtole of the arteries will ceaſe at intervals, either if the heart occaſionally do not tranſmit the blood into the arteries, or if the arteries do not receive it, or, though they do, not in that quantity which is requiſite for their dilatation. The

heart will not tranſmit the blood into the arteries, unleſs it alternately contract and dilate itſelf, and unleſs the paſſages through which it receives and tranſmits the blood be ſufficiently free. The alternate contraction and dilatation of the heart is interrupted, if the nervous influence, or influx of the blood, be defective, or if any obſtacles be oppoſed to the heart which may prevent its moving itſelf outwards. It will not receive the blood, nor tranſmit it freely, if the due quantity be deficient, if the paſſages be obſtructed or compreſſed, or if their ſtructure recede in any way from the natural ſtate, interrupting or deranging the circulation of the blood in various ways. If theſe act or take place by intervals, or occaſionally only, the diaſtole of the arteries alſo will occaſionally ceaſe, that is, the pulſe will intermit.

236. But although the heart be both well conſtructed, and its action properly performed, ſtill the pulſation may intermit through the fault of the arteries; that is, if the mouths of them be too narrow; if their coats do not yield ſufficiently to the impelling power; if they cannot readily contract; if the nervous power, or irritability in them, be either languid, or affect them ſpaſmodically; if the aorta, at its beginning and arch, be ſo dilated, that the valves cannot ſhut, ſo that, when it is contracted, the blood is forced back into the left ventricle of the heart; in that caſe, an intermiſſion of the pulſe will take place, and the more readily according as the ven-

tricle of the heart is more dilated. The intermiſſion of the pulſe, from this cauſe, is ſynchronous with the diaſtole of the heart: while in other caſes, it is ſynchronous with the ſyſtole of the heart *. For we conſider it as being ſufficiently aſcertained, that the circulation of the blood through the arteries is not to be aſcribed to the action of the heart alone.

* Inſtances of *dilatation* of the heart and *aorta*, attended with *intermiſſion of the pulſe*,—depending, as I imagine, on that cauſe,—are to be found in the Italian collection of Tozzetti, entitled, *Prima raccolta di oſſervazioni mediche*, p. 115. to 125.

237. The cauſes which in general induce *palpitation* (of which in the following chapter), *lipothymia*, *ſyncope* (216. 217. 218.), and *true aſphyxia* (228. et ſeq.), are ſuppoſed to be capable of occaſioning *intermitting pulſe*, but act leſs powerfully, and for a ſhorter time. But, according to practical obſervations, and anatomical diſſection, the more frequent and certain cauſes of intermitting pulſe, are morbid conditions of the tricuſpid, mitral, and ſemilunar valves, ſuch as rigid or bony hardneſs of them, eſpecially conjoined with dilatation of the left ventricle, as Cowper and Vieuſſens diſcovered, or calculi or tumours formed in them, ſuch as Horſt and Bellini have ſeen; polypi both of the heart and adjoining veſſels *; increaſed bulk or ulceration of the heart, as is recorded in the Sepulchretum Anatomicum of Bonet, although this laſt does not always occaſion an intermitting pulſe †; the peri-

cardium adhering to the heart or abounding with putrid fluid; the inner coat of the aorta being eroded, as Michellotte once obſerved in a nobleman of diſtinction (as will hereafter be ſhewn); paſſions of mind by which the nerves of the heart, or thoſe which go to the arteries or muſcles lying over them, are affected ‡; leſion, cutting, compreſſion, or paralyſis of the *par vagum*, or intercoſtal nerves, as has been ſhewn by the experiments of Valſalva and Molinel; the nerves of other parts being likewiſe irritated and punctured, as in excruciating pains and wounds; hypochondriacal, hyſterical, and other nervous affections ‖; wind diſtending the ſtomach; dyſpepſia; worms; and other complaints of the viſcera of the lower part of the belly, which, whether by compreſſion or irritation, being propagated along the nerves, ſometimes interrupt the motion of the heart or arteries; although the intermiſſion of the pulſe is generally then of ſhort duration.

* Morgagni, l. c. n. 21. n. 22. † *Id. ib.* ‡ *Id. ib.* n. 20.

‖ In a widow of thirty-nine years of age, tired of her condition, though of an excellent habit and temperament, but for ſeveral years ſo liable to rheumatiſm, that ſhe was diſtreſſed with a particular ſenſation of cold, from the thigh to the foot of the right ſide, Zimmerman found the pulſe ſmall, weak, and ſlow, in the right arm, while in the left it was quick and ſtrong. *De l'exper.* vol. ii. p. 23. The ſame thing generally takes place in paralytic limbs. Vogel, *Prax. med.*

238. Aſphyxia, ſmall and weak, or intermitting pulſe, eaſily appear of themſelves. The cauſes alſo, if all the preceding circumſtances be

properly weighed, as well as the obſervations which have been delivered in other chapters, concerning the diſeaſes of the præcordia and thorax, it will not be impoſſible to diſcover. Generally every defect, or languor, or intermiſſion of the pulſe, if they proceed from cauſes inherent in the heart itſelf, or neighbouring veſſels, are of more importance, and attended with greater danger, than if they proceeded from another cauſe. Intermiſſion of the pulſe, if it proceed from the heart being immediately affected, may be diſtinguiſhed by applying the hand to the heart. For if, at the ſame time when the pulſation ceaſes, the motion of the heart likewiſe ceaſe, it may be certainly pronounced that the intermiſſion of the pulſe proceeds from the heart, as the diaſtole of the arteries is ſimultaneous with the ſyſtole of the heart. But if the motion of the heart be found to be regular, and by no means interrupted, it is a proof that the intermiſſion of the pulſe proceeds from the arteries being immediately affected.

239. But enough of theſe affections, as being frequently ſymptoms of other diſeaſes, or conſidered as ſuch by noſologiſts. For the greater or leſſer danger attending them, or the evil they denote, depend upon the diverſity of their origin; in the ſame manner as their cure *, which, for the moſt part, will reſt upon that of the diſeaſe of which they are a ſymptom.

* A *long-continued, irregular pulſe* has been cured by a ſmall doſe of opium given daily, as Morgagni relates in the *Epiſt. anat. med.* ix. n. 7.

CHAPTER IX.

OF PALPITATION OF THE HEART.

240. The action of the heart may not only be diminiſhed, interrupted, and ceaſe, but likewiſe increaſed to ſuch a degree, that what is by no means obſerved by a perſon in health, while it is moving naturally, when increaſed, both becomes perceptible, and occaſions ſome uneaſineſs. This happens when the heart beats with uncommon violence, ſtriking the breaſt with unuſual force, and puſhing it outwards, ſo that even the hand, when applied, is frequently repelled. Nay, ſo great often is the motion of the heart then, that it not only becomes unpleaſant to the patient's feeling, but is alſo rendered manifeſt, both to the ſight and hearing of others, in conſequence of the heaving and ſound * of the ribs. This violent and vibrating concuſſion of the heart is termed *palpitation*, and by the Greeks πάλμος.

* Forreſt relates, that a young man, in conſequence of a wound, was ſeized with ſuch a palpitation of the heart, that the ſound was heard through the window by the paſſengers going along the ſtreet.

241. The heart cannot puſh the cheſt outwards, unleſs it contract itſelf with unuſual violence, or attempt to do ſo. The proximate cauſe of palpita-

tion, therefore, will be an unuſually violent ſyſtole, or contraction of the heart. But the heart, in order that it may contract with unuſual violence, muſt be irritated by ſome more acrid ſtimulus than nature can bear, or at leaſt (which is likewiſe probable) the reſiſtances to be overcome by it, while the power of contraction of the heart remains the ſame, ought to be diminiſhed. For in both caſes a more violent contraction of the heart follows, and its action is almoſt intirely exerted on the ribs. But ſeveral kinds of ſtimuli, calculated for that purpoſe, are either contained in the heart itſelf, or ſeem placed without it; or, what comes to the ſame thing, the remote cauſes of palpitation conſiſt in thoſe things which either irritate the heart, or afford a cauſe of irritation.

242. The cauſes inherent in the heart are eſpecially thoſe morbid conditions, which either attract too great a quantity of blood to it, as an aneuriſmatic dilatation, flaccidity and relaxation both of the heart and auricles *, and of the coronary arteries; or which diſtract and irritate its fibres, as inflammation, abſceſs, tubercles, calculi, or ſmall bones, formed any where in it; or which retard the egreſs or ingreſs of the blood into the heart, as varices and obſtructions of the *coronary vein*; polypous concretions obſtructing the *auricles*, *ſinuſes*, or *great veſſels*; fleſhy or ſtony bodies formed within; conſtriction, compreſſion, or dilatation of the pulmonary artery, auricles, or ſinuſes; a cartilaginous or bony in-

duration of theſe parts; the tricuſpid, ſemilunar, or mitral valves having become indurated, rigid, or abounding with calculi or ſmall bones, growing together, becoming too thin, or adhering,—for in that caſe they either do not permit the egreſs of the blood out of the heart, or they do not ſufficiently prevent the regurgitation of that which has paſſed out ‡;—tumours, of whatever kind, growing to the baſe of the heart, or lying between the coats of the arteries going out of the heart; ſwelling, oſſification, abſceſs, or polypus ‖, and ſimilar morbid ſtates of the heart itſelf. To which may be properly added, too great irritability and ſenſibility of the heart; on account of which, in conſequence of the ſlighteſt ſtimulus, its action is quickened in children, young people, and women of a delicate habit of body.

* When the right auricle of the heart is dilated, it admits too great a quantity of blood into the heart; in conſequence of which it is irritated, and palpitates.—*Morgagni.*

† A cartilaginous induration of the pulmonary artery, or its being beſet internally and externally with *ſtony tubercles*, eſpecially when joined with increaſed bulk of the heart, has been obſerved by Morgagni; epiſt. xxiii. n. 10. 13. 14. Riolan, in his *Anthropologia*, has deſcribed the heart of a malefactor as having been in a cartilaginous ſtate. A bone has been obſerved in the human heart by Gemma, like that which is ſaid to have been extracted from the body of Pope Urban VIII. Bartholini *ad* Fortunat. Licetum. cent. i. epiſt. lxvi.

‡ Morgagn. *Epiſt. anat. med.* xxiii. n. 9. ‖ *Id.* epiſt. ii. n. 15.

243. In whatſoever of theſe ways it happens that the blood remains in the heart, whether becauſe it does not freely paſs from the right or left cavities, or from the coronary veins; or becauſe it

is with difficulty admitted into them, eſpecially into the left cavities, or becauſe a more copious flow takes place, particularly into the right cavities; it will doubtleſs neceſſarily happen, that the irritability of the heart will be rouſed to more violent contraction, the degree of which will correſpond with the irritability and mobility of the heart. Thus, for example, the auricles of the heart, when preternaturally dilated, either ſend too much blood into the cavity of the heart, or being diſtended with blood, compreſs the trunks of the pulmonary veſſels and aorta in the neighbourhood, and, retarding the paſſage of blood from the heart, give riſe to palpitation. Preciſely in like manner tumours *, abundance of fat, or fleſhy excreſcences, growing at the baſe of the heart †, ſuch as Garner has obſerved ‡, by compreſſing the trunks of the arteries, ſeem capable of inducing palpitation. Likewiſe, in conſequence of a morbid ſtate of the mitral valves, or in conſequence of obſtruction and compreſſion of the left auricle, or pulmonary and coronary veins; the blood being retained in the right cavities of the heart, or its whole ſubſtance, will ſolicit it to more frequent and violent contractions.

* Tumours, which occupy the ſides of the heart, do not induce palpitation, as appears from the obſervations of Albertini. Likewiſe the quality of the matter is to be conſidered. Albertini obſerved a bloody tumour unaccompanied with palpitation. *Com. inſt. ſcient. Bonon.* vol. i. *in opuſc.*

† Bartholin mentions, that other diſtinguiſhed authors have obſerved ſimilar phenomena. He obſerves: "In ſuch perſons as

have died ſuddenly, Riolan has found, at the beginning of the vena cava, fleſhy ſubſtances, with a fatty maſs; and, in a phthiſical patient, Worm obſerved ſome *caruncule* growing out from each ventricle of the heart, which the celebrated anatomiſt Bauhin likewiſe obſerved. I myſelf alſo formerly noticed the ſame thing at Padua. To ſay nothing of the prieſt affected with palpitation of the heart, mentioned by Schenck (lib. xxii. *Obſervat.*), at the baſe of whoſe heart there was an excreſcence weighing ſix drachms."

‡ *Sepulchret.* ſect. viii. obſ. 23.

244. To the cauſes which exiſt out of the heart are referred, diminiſhed capacity, and bony * or cartilaginous hardneſs of the aorta, eſpecially conjoined with other morbid ſtates of the præcordia, blood, brain, or nerves; aneuriſm or polypus of the ſame, and various kinds of tumours of its coats; a ſpaſmodic conſtriction, induced by an acrid humour being depoſited †, ſecreted, or exſuding; ulceration of the inner coat ‡, as has been obſerved by Morgagni, Lanciſi, and in a Venetian nobleman, by my townſman Michelotte ‖; acrid ſerum §, pus, and ichor, collected in the pericardium; a tumour, an abſceſs, eſpecially at the baſe of the pericardium; the pericardium itſelf—although it ſometimes occaſions palpitation, ſometimes not, as Morgagni obſerves ¶,—having become thick, hard, ſurrounded with fat, cartilaginous, bony, adhering cloſe to the heart, at leaſt when it compreſſes and nearly ſtrangulates the veſſels paſſing out of the heart; the trunk of the aorta, immediately under its arch, being compreſſed by the left branch of the bronchia, which lies under it, being dilated by inſpi-

ration, as Portali remarks **; likewiſe the pulmonary veſſels being compreſſed by tubercles, vomicæ, hydatids, empyema, hydrothorax, or hydrocardia,—although this cauſe be not alone ſufficient,—or in any way obſtructed; a narrow flat cheſt; the ſpine of the back being diſtorted, or crooked; thick, viſcid, ſluggiſh blood, in too great quantity, or morbid in point of motion and acrimony, as in cachexy, chloroſis, bad-conditioned fluids, acute diſeaſes, repelled itch, herpes, gout, or arthritis, external ulcers dried up, lues venerea, ſcurvy, and cuſtomary evacuations ſuppreſſed; hyſterical and hypochondriacal affections, in which the heart is not unfrequently affected by conſent and irritation either of the veſſels, or cellular ſubſtance, or membranes, or nerves; ſpaſm of the diaphragm, particularly of its proceſſes or appendages, between which the aorta deſcends, and may be conſtricted by them being convulſed; depraved digeſtion in the *primæ viæ*; worms ††; flatus ‡‡; unuſual exertions of body, or, on the other hand, an indolent luxurious life, emotions of mind, eſpecially rage, joy, and terror; and, laſtly, the nerves, both in the brain and ganglia, and in the branches of the *par vagum*, going to the heart, being irritated or otherwiſe morbidly affected.

† From the obſervations of Verdris (*Eph. nat. cur. cent.* vi. obſ. 51.) it appears, that enlargement, hardneſs and ſwelling of the heart, are frequently found conjoined with oſſification of the aorta: likewiſe that the heart, the coronary veſſels, and right auricle, are found enlarged, appears from the obſervations of Planc. Simple

enlargement of the right auricle, in conſequence of which too great a quantity of blood is ſent into the right ventricle, as Gratz mentions, was ſufficient to induce *palpitation*. Palpitation, according to Cohauſen, is conjoined with ſcirrhus of the heart and lungs, and with viſcid and mucous blood, as alſo with too much blood, or that of a bad quality.

† Frequently an *acrid fluid* is depoſited there, if debility and relaxation attract it. It is likewiſe ſecreted; if it be true that an oily mucus diſtils from the coats of the arteries (as Lanciſi and Gorter contend, and which Morgagni does not deny), for lubricating them. See Lanciſi *De cord.* l. ii. prop. vi. Morgag. ep. xxiii. n. 5.

‡ Sometimes the *aorta* is ſo convulſed, that the thicker and rougher particles, which of themſelves could not circulate, are driven towards the inner ſurface of the artery, ſtick there, produce ulceration, and a ſenſe of acrid and burning heat; which accounts for this ſenſe of heat, of which patients frequently complain.

‖ Namely, in Aloys Foſcar, who, on that account, had been liable before his death to palpitation of the heart and aorta, and to an irregular and intermitting pulſe. *See Comment. inſtit. ſcient. Bonon.* vol. i. p. 419.

§ Morgagni, epiſt. xvi. n. 23. ¶ Epiſt. xxiii. n. 23.

** *Mem. de l'Acad. Roy. des Scienc.* an. 1769.

†† Morgagni does not conſider it as being a well-eſtabliſhed fact, that worms have been found in the pericardium; and thinks that no concluſion can be drawn from the obſervations of Sylvius, Hartman, Ballonius, Haller, and Riolan. The Epiſt. already quoted, xxiii. art. xv. Likewiſe Epiſt. xxiv. n. 23. He is rather of opinion, that worms vellicating the cardia draw the heart into conſent. Epiſt. xxiii. n. 15. Several notes upon c. x. par. 132. *Concerning the diſeaſes of the lower belly*, appear to be in point.

‡‡ A diſcharge of wind from the ſtomach alleviates a palpitation. The ſtomach and inteſtines being diſtended with air preſs againſt the diaphragm and heart lying above them. The exiſtence of air in the heart and pericardium, alleged by Morgagni, is not ſufficiently demonſtrated. *Ibid.*

THE DIAGNOSIS.

245. The ſymptoms which are almoſt peculiar to palpitation, are to be got from the obſervations already laid down in par. 240. It muſt be obſerved, moreover, that ſometimes the motion of the heart, when the palpitation is uncommonly violent, by its force luxates and breaks the ribs themſelves, a fact which Fernelius and Bellini atteſt; that the voice and reſpiration, when the complaint is uncommonly violent, are interrupted; that anxiety of the præcordia, vertigo, tinnitus aurium, trembling of the limbs, fainting, interruption of the ſleep, and alarming dreams, frequently come on; and that the pulſe, which, when the complaint is ſlighter, is ſcarcely quicker than uſual, now becomes intermitting, or at leaſt very irregular, ſmall, and obſcure. But ſome authors, as Bellini and Lieutaud, affirm, that every variety of the pulſe may be conjoined with palpitation; or that the pulſe is ſometimes ſlow, at other times frequent, at other times quick, great, ſmall, ſtrong, weak, unequally irregular, intermitting, and ſo forth; according as the heart is contracted in one way rather than another, and the blood propelled into the arteries with various force, in different quantity, and with different quickneſs, or according as the capacity and reſiſtance of the arteries oppoſe a greater or leſſer obſtacle to the free paſſage of the blood. For it may happen, that the heart may contract very frequently, and the pulſations of the arteries ſtill

be few; becauſe, at every contraction of the heart, ſo much blood is not tranſmitted to the arteries as is required to fill and dilate them proportionably; or becauſe it is not received from the arteries in ſuch a way that the vibrations of the arteries correſpond with the motions of the heart.

246. Palpitation likewiſe differs in reſpect to its degree, manner, duration, and origin. Hence one is ſlight, another great, one uniform, another irregular; it is continued or intermitting, and recurs at certain intervals or hours, or it is accidental; or idiopathic; or ſympathetic; or convulſive. Some likewiſe aſſert, that it differs from tremor of the heart. For as they ſuppoſe that the pulſe correſponds with the motion of the heart, and know, that in palpitation of the heart it may be ſlow, they ſay *, that it is manifeſt that palpitation cannot conſiſt in *tremor*, becauſe tremor of the heart, that is to ſay, its frequent contraction, ought likewiſe to occaſion a frequent pulſe. But they ſeem to labour under an error, and among them Balloni is not conſiſtent with himſelf. For he confeſſes, that ſometimes palpitation is conjoined with a very quick motion of the heart, and that ſometimes it is accompanied with a ſlow pulſe (245.). But does not a very quick motion of the heart convey the idea of tremor? Why, therefore, may not tremor of the heart be referred to palpitation? This ſeems in ſome meaſure to be hinted by Senac †

and Lieutaud ‡, of whom the one affirms, that palpitation, when it is ſlight, may be confounded with tremor of the heart, which is ſufficiently manifeſted to conſiſt in a certain languid ſtate of the heart, by the weak, irregular pulſe, loſs of ſtrength, fainting, and cold ſweats, the forerunners of death. But, in palpitation, the action of the heart ſeems to be increaſed, while in the tremor which precedes death it is diminiſhed; which, in fact, may be conſidered as forming no ſlight diſtinction between the complaints. It might be replied, however, that tremor is not always conjoined with languor of the vital powers, and that not unfrequently it is excited by a convulſive affection of the heart, which is a kind of increaſe of the irritability; and that, if ever it do ſucceed to deficiency of the ſtrength, the defect of the ſtrength is ſupplied by the celerity of the motion: that it is therefore not to be ſeparated from palpitation.

* Bellini. † *Trait. du coeur.* ‡ *Hiſt. anat.*

247. In the ſame manner as the diagnoſis of palpitation is eaſy, it were to be wiſhed that the variety of the cauſes by which it is produced could be diſtinguiſhed with equal preciſion. A retroſpect alone of paſt circumſtances ſeems to contribute moſt to attain a knowledge of their differences. If the palpitation depend upon plethora, upon viſcid blood, and relaxation of the ſolids, or if it depend upon acrimonies, both the prece-

ding ſymptoms, and thoſe conjoined with the complaint, will point out to us the preſence of plethora, bad-conditioned fluids, cachexy, chloroſis, ſcurvy, lues venerea, and retention or repulſion of acrid things. If it proceed from imperfect chylification, from worms, from hyſteria or hypochondriaſis, from wind in the ſtomach, or from injuries of the brain or nerves,—the ſymptoms of each of theſe affections, which I have frequently pointed out, will be preſent. And indeed, in hyſterical and hypochondriacal perſons, there frequently occurs a particular conſtriction about the cardia, on account of which the food paſſes with difficulty into the ſtomach. This conſtriction generally ariſes from a ſpaſm of the ſuperior orifice of the ſtomach or of the œſophagus, which not unfrequently is propagated to the fauces; ſometimes, however, it proceeds from a convulſion of the diaphragm, through which the œſophagus paſſes. Likewiſe a ſpaſmodic pain paſſes to the back and ſhoulders, or even to the arms, ſuch as is excited by aneuriſms, although in this caſe no ſymptoms of ſuch a morbid ſtate be preſent.

248. The ſymptoms of the remaining cauſes, as thoſe of hydrothorax, hydrocardia, and other diſeaſes, to which the thorax and lungs are liable, have already been delivered elſewhere *. But the proper place for diſcuſſing polypous concretions, aneuriſms, varices, and other organic injuries of the præcordia, will be in chapter X.

and XI. Morbid thickneſs, or adheſion, or ſwelling of the pericardium, can ſcarcely be aſcertained. Generally with theſe the motion of the heart is deranged, or ſymptoms of a varicoſe kind, of which we ſhall hereafter ſpeak, are ſometimes found; although there is always reaſon for the phyſician doubting, whether the deranged motion, or palpitation, proceed from an injury of the pericardium, or rather from a morbid ſtate of ſome of thoſe parts which are placed under and within it, and are not ſo much reſtrained by it in their motions, that theſe do not become ſenſible. Nay, ſometimes along with theſe even the bulk of the heart has been found increaſed, by Albertini †. But morbid ſtates of the pericardium are generally attended with ſymptoms common to morbid ſtates of other parts; ſo that, in pronouncing his judgement, the phyſician becomes careful in proportion to his acquaintance with the appearances on diſſection. Albertini, however, in morbid ſtates of the pericardium, has ſometimes obſerved that the pulſe is more deranged, that fainting is more apt to ſupervene, and that a ſenſe of weight and heat is perceived at the ſternum ‡. Meckel ‖ is of opinion that the following ſymptoms are ſufficient to detect adheſion of the pericardium to the heart; namely, the pulſe becoming irregular and increaſed, and ſometimes intermitting, upon any motion of the body, at the beginning of the diſeaſe being frequently

ſtrong, and towards its end always weak; afterwards frequent palpitation of the heart; anxious reſpiration; the voice being frequently ſuddenly interrupted; hemoptyſis; conſtant redneſs of the face; remarkable anxiety, increaſed upon every expanſion of the abdomen; derangement of the internal ſenſes; emaciation and defective nutrition, while the cauſe cannot be ſuppoſed to exiſt in the abdominal viſcera. And this opinion he endeavours to ſupport, not only by phyſiological and pathological reaſoning, but likewiſe by practical obſervations. In general, morbid ſtates of the heart and neighbouring parts occaſion a more obſtinate and conſtant affection. We are not, however, entitled to conclude from its interruption and ceſſation, that the palpitation depends upon other cauſes. For it happens, that ſometimes organic injuries for ſome time ceaſe to act, but are apt to be revived by changes of the ſeaſons, or by an error in the diet, or by exerciſe, or unuſual motion of the body.

* Chapter V. of this volume, *Of Diſeaſes of the Cheſt.*

† *Comment. inſtit. ſcient. Bonon.* vol. i. p. 384. ‡ L. c.

‖ *Hiſt. de l'Acad. Roy. des Scienc. et Belles Lettres*, ann. 1755, Berlin, p. 76.

PROGNOSIS.

249. On aſcertaining the nature of the cauſes, it may be eaſily foreſeen what the event will be. In acute diſeaſes, if palpitation take place, with

ſymptoms of concoction, it generally promiſes the wiſhed-for criſis: otherwiſe it portends, that the diſeaſe is becoming worſe, and that the præcordia are oppreſſed. In plethoric patients, and young people, it frequently precedes epiſtaxis or hemoptoe. When it proceeds from a ſlighter cauſe, which may eaſily be diſcuſſed, or readily ceaſes of itſelf, as, for inſtance, from dyſpepſia, emotions of mind, &c. it is void of danger. Nor is it very alarming if it ariſe from convulſive affections, as in hyſterical and hypochondriacal people, or from dyſcraſy, crudity, or plethora of the blood; providing it be aſſailed with the proper remedies. That palpitation which is occaſioned by a metaſtaſis, by the ſuppreſſion of a cuſtomary evacuation, or by an hemorrhage, cauſes more trouble. Laſtly, that which ariſes from an organic injury, either admits of no cure, or a very difficult one, which is ſcarcely of any duration, and the degree of the danger will correſpond with the nature of the organic injury. This is inferred likewiſe from the accompanying ſymptoms, namely, the difficult reſpiration, the œdematous ſwelling of the feet, the anxiety of the præcordia, and the weakneſs, or ſmallneſs, of the pulſe. Generally it proves very diſtreſſing to thoſe who have paſſed their fortieth year. Such perſons ſeldom arrive at old age, being generally cut off by a ſudden death. For being attacked either with an acute fever, or dropſy, or a

ſudden fit of ſyncope, they are carried off *. In general, a palpitation which happens frequently is not to be ſlighted; eſpecially if it ſucceed to mental affections of long ſtanding, or take place after the reſolution of certain diſeaſes, accompanied with much nauſea, and a vomiting of bile, and if the vomiting do not remove the nauſea and palpitation, as is well known to perſons labouring under black bile, and induration of the ſpleen.

* Nic. Piſo, lib. ii. *De morb. cog. et cur.* p. 207.

THE CURE.

250. THE method of cure ought to vary according to the diverſity of the cauſes. The *deuteropathic*, or *ſymptomatic* palpitation, is cured by the remedies accommodated to the diſeaſe on which it depends. In general we muſt endeavour to facilitate the circulation of the blood through the præcordia; every kind of irritation, or irritating cauſe, ought to be removed and corrected; exceſſive ſenſibility or irritability muſt be allayed; and, laſtly, the heart and neighbouring parts ought to be ſtrengthened. By almoſt univerſal conſent bleeding is recommended in the cure of palpitation, and indeed it is often neceſſary in patients labouring under it. But when the ſtrength is reduced, or when the preſence of dropſy is ſuſpected, or when the pulſe has become enfeebled in conſequence of hemorrhages and evacuations, it is with good reaſon

to be conſidered as pernicious. Nor is it of much ſervice, although it ſometimes alleviates the complaint, in the *idiopathic* ſpecies. But in the ſpecies of palpitation preceded by, or accompanied with, plethora, youth, a good habit of body, ſuppreſſed evacuations, exceſſive motion of body or mind, or terror, it is extremely beneficial to let blood from the arm, foot, or hemorrhoidal veins. Likewiſe when it proceeds from a *polypus* or *aneuriſm*, and the bad habit of body has not proceeded ſo far as to contra-indicate it, than it there is not a more efficacious remedy for preventing the more ſevere ſymptoms, and inſtant ſuffocation.

251. If indigeſtion, worms, obſtruction of the abdominal viſcera, or too great fulneſs of the ſtomach, have occaſioned the complaint, gentle cathartics, clyſters, anthelminthics, and aperients, are to be employed. It is likewiſe ſerviceable to purge the belly, in order to remove complaints of the head, if any ſuch have ariſen with the palpitation. Lentor, viſcidity, and acrimony of the blood, require the juice of ſuccory, dandelion, bugloſs, hops, balm, brook-lime, noſe-ſmart, or broths prepared with theſe plants; goat-whey, milk, medicated waters, both mineral warm-baths, and acidulated or chalybeate waters. When repelled cutaneous diſeaſes have given riſe to palpitation, beſides the diluents and correctives a little before mentioned, it is proper to employ crude anti-

mony, flowers of ſulphur, decoctions of ſarſaparilla, of bark, of rough bind-weed, ſoap-wort, viper-ſoup, and the bath.

252. In hypochondriacal and hyſterical patients, bitters and ſtomachics, as wormwood, germander, ſouthernwood, caſcarilla, quaſſy-wood, peruvian bark, rhubarb, the *elixir proprietatis* Paracelſi, and chalybeates, are employed; which laſt are likewiſe moſt proper when the ſtructure of the heart and great veſſels has become relaxed and enlarged. Nor muſt we omit cordial and analeptic remedies, if loſs of ſtrength, or too ſmall a quantity of blood, have occaſioned the diſeaſe. But, if nervous affections be the cauſe, anodynes and ſtimulants may be employed; particularly cooling powders, nitre, the *liquor anodynus mineralis* of Hoffman, ſuccinated hartſhorn, oil of amber, Homberg's ſedative ſalt, camphor, caſtor, water of the flowers of oranges, of teil-tree, of peppermint, green nuts rediſtilled, muſk, and opium, although this laſt be here reprobated by Lieutaud.

253. The manner of living ought to be accommodated to the indications. Over-fulneſs of the ſtomach, and a variety of diſhes, ought to be avoided. The ſupper ought to be light. Wine ſhould be either intirely forbidden, or corrected with chalybeate water. The patients alſo are to remain as quiet as poſſible, eſpecially thoſe who labour under any organic injury, or their motion ought to be very gentle, ſuch as may neither

prove fatiguing, nor quicken the motion of the blood too much. But hypochondriacal and hyſterical patients derive the greateſt advantage from exerciſe and motion, provided they have recourſe to them gradually. Study, venery, emotions of mind, rage, grief, and melancholy, are carefully to be avoided.

CHAPTER X.

CONCERNING POLYPUS OF THE HEART AND AORTA.

254. SINCE anatomy began to be cultivated with ſuch ardour (from the commencement of the ſixteenth century), diſſectors have frequently found in the paſſages of the blood certain firm and tenacious concretions, reſembling a piece of fleſh, membrane, or lard, to which, on account of ſome reſemblance between them and the polypi of the noſe, they have given the name of *polypus* *; a diſeaſe which was either wholly unknown to the ancients, or of which the exiſtence was barely conjectured †.

* Haller is of opinion that Veſali and Beniveni firſt diſcovered polypi on diſſection; but Morgagni doubts whether they were actual polypi, or rather *excreſcences*, as Marcellus Donatus and others have named them. Hence he aſcribes the merit of the diſcovery to Helidæus Paduanus, who flouriſhed about the beginning of the ſixteenth century, and afterwards to Coyter, and Canan, an. 1574. to Ballonius, 1575. to Smeti, 1576. and to Eraſtus, 1580.

† Galen probably conjectured the exiſtence of this diſeaſe, as he deſcribes the complaint of Antipater under the name of *ſlight obſtructions of the arteries*.

255. Polypi are frequently found in the greater ſpaces through which the blood paſſes, namely, in the cavities of the heart and trunk of the aorta, eſpecially if they be preternaturally diſtended. The concretions found there (254.), vary in their nature and form. They generally conſiſt of a number of concentric ſtrata, or lamellæ, like the layers of an onion. Not unfrequently white points reſembling veſſels, if the lamellæ be red, or red points if they be white, are noticed in them. Others put on the appearance of a mucous and pituitous coagulum, or even of grumous blood, overſpread with a white matter like jelly, or they reſemble black blood, or ſome tenacious body compoſed of theſe, ſomewhat fibrous and membranous, and of different colours. They likewiſe almoſt all adhere to the ſides of the veſſels and ſinuſes, but not every where in the ſame manner. For ſometimes they are at freedom in ſome part, and float, ſending out proceſſes into the neighbouring veſſels, and in various ways interrupt the courſe of the blood. Sometimes they remain more firmly fixed in different ſituations. Laſtly, they ſometimes ſtretch as it were a new inner coat along the concave ſurface of the veſſels, or are ſo perforated with ſmall holes, or excavated, that the blood is allowed to paſs through them.

256. The proximate cauſe of theſe concretions ſeems to be ſome diminution or ceſſation of the motion of the blood, in conſequence of which its gelatinous and mucous, or, as they are called, fibrous parts, become coagulated. For it is well known that the blood, when it has loſt its motion, becomes coagulated, and that that is principally owing to its concreſcible and mucous part, with which the craſſamentum, ſerum, and lymph, abound. Whatever, therefore, diminiſhes, retards, and reſtrains the motion of the blood, or increaſes its property of concreting, or weakens the ſtrength of the ſolids, will occaſion that ſtagnation upon which we have ſaid polypous concretions depend. Fainting-fits, and, ſtill more actual ſyncope, hold the firſt rank among the remote cauſes; while the ſecond is held by ſudden fear and violent terror. For if we duly weigh, how, in fainting, and ſudden and violent fits of terror, the motion of the heart is ſuppreſſed or retarded, and how, during the repeated languid tremors of the heart, of its valves and veſſels, it is ſhaken, it will at once appear evident, that polypous concretions will neceſſarily ariſe, as appears from the very clear experiments of Ruyſch and De Haën.

257. Moreover, while the circulation of the blood through the præcordia is oppoſed by conſtriction, induration, compreſſion, or ſwelling of the pulmonary artery or aorta; by diſeaſes of the lungs, as difficult reſpiration, aſthma, perip-

neumony, pleuriſy, phthiſis, dropſy of the cheſt, and pericardium; and likewiſe by long-continued ſpaſm, or paralyſis, of the muſcles ſubſervient to reſpiration; and other impediments of this kind which check or retard the free motion of the blood, and prevent the auricles and ſinuſes of the heart from emptying themſelves; the formation of a polypus is favoured.

258. The following cauſes, by increaſing the lentor of the blood, and its diſpoſition to concrete, prediſpoſe to the production of a polypus; namely, lues venerea, arthritis, and ſcurvy; the repelling of ſcabies, and other cuticular complaints; grief; acids, eſpecially of the mineral kingdom; fermented ſpirits; coagulating poiſons, particularly preparations of lead; poiſonous vapours; peſtilential and contagious fevers; crude, viſcid, auſtere, and difficultly digeſtible aliments; a cold ſeaſon and climate; or, on the other hand, exceſſive heat; drinking of cold water; plethora; too great a quantity, or exceſſive denſity, of the ſerum and lymph; a ſlender habit of body, which Hoffman accuſes; exceſſive, though uſual evacuations; and eſpecially, according to Van Swieten, great loſs of blood of any kind.

259. Thoſe things, again, which impair the force of the ſolids, and prediſpoſe the blood to concrete any where, are, eſpecially, want of motion; a ſluggiſh and indolent life, in which the body is in a ſtate of languor, the elaſticity of the fibres ceaſes, the circulation of the fluids becomes

ſluggiſh, and their due liquidity is loſt. Intenſe cares and ſtudies act in a ſimilar manner. Under this head chiefly falls an aneuriſmatic and varicoſe dilatation of the auricles and ventricles * of the heart, or of the veſſels attached to them. The blood ſtagnates chiefly in thoſe places in which the impelling force of the veſſels is too ſmall, or their capacity too great. Now, too great capacity, and too ſmall an impelling power, without doubt, take place both in aneuriſmatic and varicoſe affections.

* In the body of our diſtinguiſhed and much lamented ambaſſador, Firmian, the thorax was found much depreſſed, and the pericardium, which contained a ſmall quantity of fluid, was ſo ſurrounded with fat (which was too inches thick), that it was compreſſed by it on all hands. Hence the heart appeared to be ſmall and flaccid, and the auricles likewiſe ſmall. The ſides of the left ventricle were extremely thin and almoſt cartilaginous, thoſe of the right ſomewhat leſs extenuated, but exceedingly flaccid. Within the cavity was found a large polypus, which with two branches entered the *cava* and pulmonary artery, and was externally grumous and black, but internally white, fibrous, and tenacious. It was ſuppoſed that the internal part had been of long ſtanding, while the external was recent, and occaſioned by death. For if the white, hard part had been a recent concretion, the part conſiſting of cruor above and below would have appeared the ſame, as Morgagni ſuppoſes, *pſeudopolypi* being formed in dead bodies, both erect and ſupine. But it was internal, and reſembled a *nucleus*, ſurrounded by a recent concretion, or *pſeudopolypus*. It may, therefore, be fairly concluded, that the one was a recent, the other an old, concretion. But the extenuation and thinneſs of the ſides of both ventricles, and the flaccidity of the right, ſeem to indicate, that the heart had been formerly *aneuriſmatic*; and that afterwards being confined to a narrow ſpace by the preſſure of the ſurrounding fat, it appeared to be of a ſmall ſize. From which morbid ſtates, the author, in his Italian Journal for 1782, explains the ſymptoms attending the diſeaſe, and the

patient's death itſelf. We have extracted theſe few remarks, leſt, by tranſcribing the intire hiſtory of the diſeaſe, the full account of the diſſection, and the corollaries deduced from them, we ſhould be led too far from the ſubject. [*Note of German Editor.*]

260. Whenever, therefore, it happens, that the grumous blood—whether from fainting, or terror, or enlargement of the cavities through which the blood paſſes, or from inequality, conſtriction, or compreſſion of them, or from any other cauſe in the heart, or neighbouring veſſels—loſes its motion, and remains faſt there, a gradual accretion of ſome of it to the heart takes place, particularly of the fibrous part, and of the moſt concreſcible, viſcid portion of the ſerum, ſeparating from the other parts, and, on account of the diminiſhed motion, coagulating; and thus, in conſequence of freſh particles being applied in a fibrous or reticular manner, and being united by mutual attraction, or entangled in the windings and villi of the heart, or tendons of the valves, ſolid polypi of various hardneſs, ſize, and colour, are formed; according as a greater or leſſer adheſion, or length of time, or a greater or leſſer addition of matter, or the red or white part of the blood, have concurred in their formation. That this is the fact, ſeems to be demonſtrated by the very ſtructure of polypi, which frequently incloſe grumous blood as a nucleus, and completely reſemble a congeries of pellicles applied to each other, ſuch as Mal-

pighi obſerved upon an intimate examination of their compoſition.

261. Nor am I diſpoſed to alter my opinion by the arguments adduced againſt the formation of polypi in living animals by Kerckring, Lieutaud, Paſta, Fantoni, Ruyſch, Swenck, and others, who are of opinion, that polypous concretions of every kind, which are found in the heart and great veſſels of dead bodies, adhering to its ſides, valves, and *columnæ carneæ*, are formed of the concreſcible part of the blood at death, or at leaſt immediately after it. For although I do not deny that they are frequently formed at a perſon's death, or ſhortly after, in conſequence of the blood ſtagnating, cooling, and becoming coagulated; ſtill there are irrefragable arguments by which we are compelled to believe that polypi are likewiſe formed in a perſon during life, and continue for a length of time.

262. And, firſt, to reply to the objections of ſuch as oppoſe this opinion, I may obſerve, that Kerckring did not deny every kind of formation of polypi, but only that which is derived from all the parts of the blood, not ſuch as ariſes from the white and concreſcible parts; which he has done ſo feebly, according to Morgagni *, that Malpighi found no difficulty in making a much more powerful defence of their formation †. Nor is the cauſe adduced by Lieutaud leſs feeble ‡, as he denies that polypi, ſuch as break out in the noſe, that is, fungous, fleſhy excreſcences, were ever diſcovered by him in

dead bodies, of which he mentions having diſſected a vaſt number; for I do not here ſpeak of the fleſhy and fungous tumours growing in the heart or veſſels, as appears from what I have already ſaid,—although fleſhy excreſcences, or ſarcomata, which he had obſerved, have been ſeen by Veſali and Beniveni, according to Marcellus Donatus, and, laſtly, by Wiſeman, in a girl of ſixteen years of age,—but concerning theſe concretions which are formed by coagulated blood, or by its concreſcible part. Moreover, the objections of Paſta apply rather to thoſe who believe that all polypi diſcovered in dead bodies had long exiſted in them when living, or to thoſe who have overlooked, or not ſufficiently inveſtigated, other cauſes to which the diſeaſe, and even the patient's death, might with more reaſon have been aſcribed, or who, truſting to doubtful and fallacious ſymptoms, and ſuch as are in common to other affections, have raſhly and improperly taken the exiſtence of *polypi* for granted.

* *Epiſt. anat. med.* xxiv. n. 27. † *Oper. Poſthum.*
‡ *Precis de Medicine*, liv. 1. cap. *De la ſyncope*, p. 275.

263. Which objections are ſo far from ſtaggering me, that, on impartially conſidering every particular, they ſeem to be perfectly conſiſtent with reaſon. It does not, however, follow from them, that we ſhould conclude the formation of polypi in living animals to be neither true nor poſſible. For we obſerve, in the firſt place, that *aneuriſms*, which at firſt were attended with a great pulſation, fre-

quently in progreſs of time gradually loſe all pulſation; and that this, as all agree *, happens becauſe the cavity of an aneuriſm, in conſequence of the blood ſlowly concreting, and a polypous cruſt being gradually formed, is lined as it were with a new coat; which has been frequently demonſtrated upon an aneuriſm of the arm or poples being either accidentally or intentionally opened. For, on the aneuriſmatic ſac being opened, immediately not only *polypous concretions* of various kinds have been diſcharged †, but have alſo appeared to have lined the intire inner ſurface. In the ſecond place, it is to be remarked, that Langhans relates ‡ having obſerved the left auricle of the heart burſt by a *polypus*, which was of ſuch bulk and ſtrength, that it could by no means be reckoned newly produced; nor can we believe that it could have been formed at the very period of the patient's death, as it is quite obvious, that whatever fluid blood was in the auricle, or entering it, before its burſting, ought to have quickly flowed out on its being ruptured, and that none of it could be retained in it, unleſs what had long before become firmly united and coagulated.

* Van Swieten on Boerhaave's *Aphoriſms*, § 176. p. 236. De Haen, *Rat. med.* Part iv. c. 2. Maſotti, *Dell' aneuriſma del poplite*, p. 28. † *Act. Helvet.* vol. ii. ‡ *Ibid.* p. 123.

264. In the third place, it is confirmed beyond a doubt, by a well-contrived experiment of Lan-

ciſi. He tied up one of the iliac arteries of a living dog; fifteen days afterwards he opened the veſſel, and found in it a *polypous concretion*, above the ligature *. Nor is it any objection, that the ſame experiment, on being repeated by another anatomiſt of great celebrity, did not anſwer. For Paſchal Ferraria † tried the ſame thing, by tying up a branch of the iliac artery of a lamb, and clearly obſerved the ſame reſult. Likewiſe, before his time, Petit had noticed this in perſons who had ſuffered amputation of any limb: for, on the ſecond day after amputation, ſometimes alſo upon the twentieth or thirtieth, he diſcovered *polypi* in the arteries of the amputated limb, which had been tied up, as uſual, to prevent the blood from flowing ‡.

* *De aneuryſ.* prop. xxxviii. p. 127. † *Delle morti, e malattie ſubitanei*, 2nd edit. p. 39. et ſeq. Neapoli, 1767. ‡ *Mem. de l'Acad. det Scienc.* ann. 1731.

265. Are theſe polypous concretions to be aſcribed to the failure of life, or to the coagulation of the blood ſucceeding to death? If, therefore, both the uſual pulſation of aneuriſms, on polypi being formed within them, very frequently diſappears, and aneuriſms of external parts, on being opened in the living ſubject, ſhew themſelves to be full of polypi, and the auricles of the heart, when ruptured, ſometimes exhibit polypi formed within,—and experiments, made both in living animals and in men, demonſtrate their exiſtence,—we may certainly infer, that the po-

lypi which are formed in the heart, and blood-veſſels too much dilated, or in any other way injured, are not all the effects of the failure of life, or of the ſupervening of death, as they are by ſome ſuppoſed to be.

266. But if the authority of ſuch as deny the exiſtence of polypi may be refuted by authorities of equal weight, we may bring into view the names of Pechlin, Malpighi, Smelly, Vater, Langguth, Schacher, Hoffman, Senac, Van Swieten, Morgagni, Haller, and others, authors of extenſive learning, deep anatomical knowledge, and practical experience, all of whom both defend the exiſtence of polypi, and have either themſelves ſeen ſuch as had long exiſted in the living body, or mention them as having been ſeen, on the authority of others. And although it cannot be denied, that blood newly drawn ſometimes concretes into a very hard maſs, adhering with conſiderable force to the glaſs veſſel (which Paſta objects), ſtill, with the illuſtrious Haller, we remark *, that *coagula* which are too hard and white, and therefore not ſuddenly formed, eſpecially thoſe found in the right auricle, in the valves of the veins, *chordæ tendineæ*, and proceſſes of the heart, interwoven in ſuch a manner that they cannot be ſeparated without laceration, or, laſtly, fixed as it were with their roots among the reticulated fibres of the heart,—which, with many others, the author has ſeen,—ſhew quite a different nature and manner of cohering

from what thoſe do which are ſaid to be either recently formed in dead bodies, or in the blood drawn from a vein.

* *Phyſiolog.* lib. v. ſect. 1. § 11.

267. Beſides, what do ſymptoms preceding a polypus being found in the dead body denote? "Do not theſe," ſays Haller *, "manifeſtly confirm the fact, that in the living ſubject there was preſent an impediment in the cavities of the heart, which was not formed latterly, and during the patient's death; and that the heart palpitated on account of imperfectly emptying itſelf, being never able to free itſelf from that ſtimulus, which, ariſing from the polypus,—a thick body ſituate in the internal cavity,—could not but rouſe the action of the heart?" Add to this, that Morgagni himſelf, who has with the utmoſt care collected together and reviewed all the arguments againſt the formation of polypi in the living body, does not deny the formation of polypi of all kinds. For both formerly in his *Adverſaria Anatomica Secunda*, in the ſecond animadverſion, and lately in his *Epiſtola Anatomica Medica*, xvii. n. 9. as alſo in his xviii. n. 23. and, laſtly, in his xxiv. n. 30. he relates, that polypi may be formed before death, eſpecially in aneuriſms forming a ſac, and that he has ſometimes actually ſeen them formed. Nay, he thinks it very difficult to ſuppoſe,—if the motion of the blood, although it be not intirely ſtopt, ſtill ſhould be retarded, as in great aneuriſms,—that nothing, at leaſt after a

length of time, ſhould ſeparate, concrete, and adhere from the maſs of blood, either proceeding thither too ſlowly, or being even almoſt ſtagnant, in aneuriſms forming ſacs. For it is very probable, that the whole quantity of blood will not readily return through the ſame orifice of the ſac through which it was eaſily impelled. But although he affirms, that the blood may ſometimes become coagulated in aneuriſms, he denies that this happens in the heart, although preternaturally enlarged, on account of the fibres of the heart being more irritable, and therefore always re-acting more powerfully than thoſe of the arteries, ſo that the blood can never become quieſcent in it †. But thoſe who object to the formation of polypi on this account ought to conſider, that polypi may be formed, not only in conſequence of deficient motion, but alſo that they ariſe from a tremulous one, ſuch as in ſyncope or great fear affects the heart, as De Haën has clearly demonſtrated; to ſay nothing of foreign bodies introduced into the blood, and cauſing it to coagulate. From all which, if I miſtake not, it appears ſufficiently evident, that the formation of polypi is not altogether incompatible with the living ſtate.

* *Phyſiolog.* l. c. † *Cir. epiſt.* xxiv. n. 30.

268. As ſome polypi, therefore, are formed during the period of death, and others long before that time, it appears that two kinds of them

are to be reckoned, the one conſiſting of true polypi, which have been formed during life, and have in fact occaſioned the diſeaſe; the other of ſpurious polypi, which are only formed at the patient's death. The former conſiſt of a firm, tenacious, elaſtic, and, as it were, fibrous ſubſtance, and adhere firmly to the ſides, columnæ, and valves of the heart, or to the ſides of the veſſels, ſo that they ſometimes cannot be ſeparated without laceration; while the latter, occaſioned by death, have the appearance of a ſoft maſs, which can eaſily be ſeparated, very ſimilar to coagulated blood, or the inflammatory cruſt, as it is called; or they reſemble red grumous blood below, and gelatinous, whitiſh, or yellowiſh above. Which diviſion is ſo much approved of by Morgagni, that he even points out the method in which the polypi found in dead bodies ought to be referred to one or other kind *. On the whole, he is of opinion, that thoſe which are formed in ſacciform aneuriſms take place before death, if they extend and adhere in every direction, ſo as not to ſeem to correſpond with the poſture of the patient or dead body; likewiſe, if they be of a dark or old colour, and unuſually dry ſubſtance; and that by theſe diſtinctions the true differ from the ſpurious, or pſeudopolypi, formed in the heart or veſſels at death; as theſe, on the contrary, correſpond exactly with the difference of poſture in which a perſon has died or lain, the red part being placed

underneath, while the whitiſh gluten, or glutinous coagulum, appears above.

* *Epiſt. anat. med.* xvii, n. 27.

THE DIAGNOSIS.

269. HAVING thus explained the real nature and origin of polypi, I muſt now enumerate the ſymptoms by which their preſence in the præcordia is ſuppoſed to be aſcertained. Their principal marks are ſuppoſed to be, an intermitting or irregular pulſe; violent pulſation of the carotid and ſubclavian arteries; palpitation of the heart; lipothymia and ſyncope; difficulty of breathing; and œdematous ſwellings of the feet. But how uncertain theſe ſymptoms are, as being common to many other diſeaſes and cauſes,—inſomuch that they cannot be reckoned pathognomonic ſymptoms of polypus,—will appear perfectly manifeſt, partly from what has been delivered concerning morbid reſpiration, dropſy of the cheſt and pericardium, lipothymia and ſyncope, aſphyxia, ſmall, weak, and intermitting pulſe, and, laſtly, palpitation of the heart; partly from the obſervations to be delivered in the following chapter, concerning aneuriſms and varices of the præcordia. Nay, a true medical hiſtory relates *, and I myſelf have more than once obſerved, that ſome of theſe ſymptoms,—not excepting the intermitting or irregular pulſe, which has otherwiſe been conſi-

dered generally as being an uniform concomitant of polypus,—have at times been wanting in perſons in whom a polypus has been diſcovered. Moreover, Albertini very judiciouſly remarks †, that thickneſs of the pericardium, or its coheſion with the heart, frequently aſſumes the ſymptoms of polypus, and leads to miſtake; and that theſe morbid affections cannot be certainly diſtinguiſhed, unleſs it be conſidered as a ſufficient diſtinction, that in polypus the pulſe generally recedes more from the natural one, and that, on applying the hand to the ſpot of the heart, a more manifeſt motion is perceived, while fainting is not ſo apt to occur as in them.

* Albrecht Thaer, *Nov. act. phyſ. med. acad. Cæſar. Leopold. Carolin. N. C.* vol. i. ann. 1757. p. 6. Morgagni, *Epiſt. cit.* xxiv. n. 28. Trew, *Nov. act. med. &c.* vol. ii. obſ. 53. *Com. de reb. in ſcient. nat. et med. geſt.* vol. vii. P. i. p. 114.

† Concerning ſeveral morbid ſtates of the reſpiration, among his *Opuſcula*, vol. i. *Com. inſt. ſcient. et art. Bonon.* p. 385.

270. Nevertheleſs, if the cauſes which are capable of inducing polypus have preceded, if ſymptoms of other affections of the præcordia be abſent, or indications of ſuch as are readily conjoined with polypi be not wanting; and moreover, if the pulſe, though not intermitting, be unequally irregular; if palpitation of the heart; anxiety; extreme uneaſineſs; difficult reſpiration; cough; and an uneaſy ſenſation in the cheſt, (which laſt ſymptoms indicate that the blood does not paſs freely from the left ventricle of the heart

into the aorta, or that its return from the lungs is retarded in the pulmonary vein or left auricle), gradually attack the patient, and diſtreſs him unremittingly, we ſhall have reaſon to ſuſpect the polypus to be within the aorta, or left ſinus of the heart, or left auricle *. But if the reſpiration be little affected; the pulſe languid and ſmall; if the patient be diſtreſſed rather with tremor of the heart and anxiety, than violent palpitation; and if the veins of the neck throb and ſhew a kind of undulatory motion, it is more probable that the polypus is contained in the right cavities of the heart. Albrecht Thear †, in a patient, in whoſe right ventricle he found a great polypus ſtretching out into the pulmonary artery, while in the left there was a leſs one, running more than a foot into the aorta, accompanied with great enlargement of the heart,—had obſerved difficult reſpiration, and the greateſt anxiety, with occaſional faintings, or intermiſſion of the pulſe.

* Albertini, l. c. p. 391. † L. c.

271. Of theſe ſymptoms ſome are conſtantly preſent, and others recur. The pulſe, in particular, is almoſt always unequally irregular; nay, during the difficulty of reſpiring, which generally comes on, or is aggravated, upon any motion of the body, though ſlight, or on a change of the air, eſpecially when the ſouth wind blows, it becomes obſcure, intermitting, and fails. But the tremor, palpitation of the heart, and dyſpnœa,

return, or are aggravated, at irregular periods, threatening ſuffocation, lipothymia, and actual ſyncope. But whenever the intermiſſion or irregularity of the pulſe ceaſes, we muſt not ſuppoſe that the polypus alſo does ſo. For I have already remarked, that during the preſence of a polypus in the præcordia, ſometimes no irregularity or intermiſſion of the pulſe was diſcoverable (269.); that is to ſay, when the ſize, ſtructure, or poſition of the polypus is ſuch as, though it deranges the circulation of the blood, does not do ſo to an enormous extent *.

* Albertini, l. c. p. 390.

272. Malpighi, beſides the intermitting pulſe, and frequent fainting, has likewiſe frequently ſeen conjoined with polypus of the heart, a vibrating pulſe, dilatation of the veſſels of the neck, ſtraitening of the præcordia, torpor of one or other arm, and an obſcure pulſe in the ſame, together with a ſpaſmodic pain in the ſternum *. Hoffman, however, aſſerts, that a fixed pain is perceived at firſt about the heart, with a ſenſe of compreſſion; but that when the diſeaſe has been of ſome ſtanding, in addition to theſe ſymptoms, more frequent palpitation of the heart, and a very irregular pulſe, frequently intermitting at intervals †, come on. Some add, œdematous ſwellings of the feet; ſome a red, ſome a purple, and others a cachectic colour of the face, accompanied with ſwelling of the eye-lids; panting, apt to come on while the patient is ſpeak-

ing; the blood, when drawn, being tenacious, firm, and inflammatory; bad-conditioned fluids; and other conſequences of the derangement of the circulation through the præcordia ‡. But I have already ſhewn (269.) with what caution theſe marks are to be truſted.

* L. c. † L. c. ‡ De Haen, Macoppe, Malpighi.

PROGNOSIS.

273. A polypus is generally conſidered as being incurable. Frequently it induces ſudden death *, or the ſuffocating catarrh †. Sometimes it cuts off the patient by a ſlow death, and by hydrothorax and hydrocardia, into which thoſe perſons are eſpecially liable to fall, whoſe face is ſwoln, or in whom œdematous ſwellings of the feet, or a cachectic habit of the body, have ſupervened. Riolan, Riverius, and others ‡, record inſtances of perſons labouring under polypus having prolonged their miſerable exiſtence for fifteen or ſixteen years. But although this diſeaſe be affirmed to be incurable, ſtill, if it be recent, and the polypous concretions have not yet become indiſſoluble, De Haën and Langhans ‖, from whom Albertini does not ſeem to have differed much, do not loſe all hope, and ſuppoſe it practicable to remove the complaint by a proper method of cure; nay, they even record inſtances of ſome having been cured.

* Tulpius and Bartholin mention death having been ſuddenly occaſioned by a polypus of the left ventricle; and Wepfer by one of the aorta. † Kirſten. ‡ A lingering death having

been occaſioned by a polypus, is recorded in the *Act. Acad. Nat. Curioſ.* || *Rat. med.* p. ii. c. viii. *Act. Helvet.* vol. ii. p. 133.

THE CURE.

274. THE cure, therefore, reſts upon the indications of reſolving the lentor of the blood; of reſtoring to it its proper fluidity, and equable circulation through the veſſels; of attempting the ſolution of the polypus, or at leaſt of preventing its increaſe; and of mitigating the effects which ariſe from it. Hence bleeding, and indeed repeated, eſpecially in plethoric and ſanguine temperaments, is conſidered as being beſt adapted both for preventing polypus, and for diſſolving it when it is already formed, as alſo for diſcuſſing or allaying its ſymptoms. But in the employment of it, ſome bounds muſt be obſerved, and due attention muſt be paid to the concomitant circumſtances; that the vigour may not be too much reduced to the patient's great detriment, that the ſtrength of the veſſels may not be weakened, or the due craſis of the blood deſtroyed; which I have not unfrequently lamented to obſerve from the blood being raſhly and inconſiderately drawn. The phyſician ought not always to be deterred from it, by the obſcureneſs of the pulſe, by the debility, or by a cachectic habit; for when the patient ſeems to be oppreſſed and ſuffocated, he is frequently ſurpriſingly relieved by cautious bleeding; and it is better to attempt a doubtful remedy than none at all. On the whole,

however, nothing rouſes the languid motion of the heart more, or procures a paſſage for the collected and ſtagnated blood, or reſolves the concretion of it when begun, better than ſpeedy bleeding, as the experiments made by Haller upon living animals demonſtrate.

275. By this means, therefore, are we to obviate the violent palpitation which ſupervenes on orthopnœa and ſyncope. In cachectic, hydropic, debilitated patients, and in thoſe affected with viſceral obſtructions, it is ſafer to let blood by means of leeches applied to the hemorrhoidal veins, or dry and ſcarifying cupping-glaſſes applied to the back and legs. Likewiſe frictions and painful ligatures, immerſing of the hands and feet (if the œdematous ſwellings permit it) in warm water; ſtrong ſmells applied to the noſtrils, and ſimilar remedies, may be employed with advantage, as circumſtances may require. Nor is it improper ſometimes to employ cordial and gently reſolving remedies, or even ſedatives, and paregorics; when the languid powers of life are to be rouſed, or ſpaſmodic and convulſive affections ſeem to require being allayed.

276. Whatever likewiſe oppreſſes the abdominal viſcera, and compreſſes the veſſels going thither, or is an obſtacle to the free motion of the diaphragm, muſt be removed with all diſpatch. The belly, therefore, muſt be kept free from fæces and flatus, by means of clyſters and gentle laxatives, of which I have elſewhere made frequent mention. We muſt next employ thoſe

things which dilute, correct, and attenuate the denſity of the blood and lymph, and obviate the cauſes from which the diſeaſe has proceeded. Nitre, vitriolated tartar, the *terra foliata tartari*, or its ſpirit, ſal polychreſt, honey, oxymel, and gum-ammoniac, prove remarkably inciſive. On account of their ſaponaceous, and at the ſame time corrective property, we may employ, in the ſpring-time, ptiſans of barley, ſow-thiſtle, cheveril, and ſuccory; and in the ſummer-time, medicated waters drunk abundantly, and for a length of time; under the guidance, however, of a judicious practitioner, for by means of them the whole maſs of blood is diluted, all the veſſels are unloaded, the circulation of the fluids is promoted, the oſcillations of the fibres are rouſed, and the too great propenſity of the blood to concrete prevented.

277. Senac prefers ſpirit of ſal-ammoniac, ſalt of tartar, Venice ſoap, lime-water prepared by properly burning oyſter-ſhells; and of theſe he deſires to be taken, for a length of time, as much as ſeems calculated to the degree and obſtinacy of the complaint. We muſt begin with a ſmall doſe, and gradually proceed to a larger. They poſſeſs ſo great a power of reſolving polypus, that very large and hard polypi, extracted from dead bodies, and immerſed in lime-water, mixed with Venice ſoap and ſalt of tartar, have been diſſolved in a very ſhort time *.

* See Senac, *Trait. du coeur*. vol. iv.

278. Langhans recommends *, as approved by experience, to be taken once or twice a-day, a powder compoſed of a ſcruple of Virginian ſnake-root, twelve grains of purified ſal-ammoniac, and the like quantity of pure nitre. He next preſcribes having recourſe to the employment of ſteel, with the addition of gentle aromatics. Steel will be found moſt ſerviceable when debility of the ſolids, bad digeſtion, and a cachectic habit, indicate the uſe of ſtrengthening remedies. De Häen alſo boaſts †, that he has reſtored to health not a few labouring under polypi, merely by the antiphlogiſtic regimen. He uſed to give them, for ſix weeks, daily, half an ounce of the rob of elder-berries, the like quantity of the pulp of tamarinds, and a drachm of nitre, taken off in a full draught of whey. He added, in the evening, occaſionally, the paregoric made from diacodium. We read of the expreſſed juice of the leaves of hops, or cheveril, being recommended by Albertini ‡, to which he ſometimes added the milk of gum-ammoniac, prepared after the manner of Barthollet, or a portion of freſh ſpermaceti; and when it was neceſſary to act more decidedly, mixed with a few grains of the martial flowers of ſal-ammoniac, or a quantity of the eſſential ſalt of ſome of the diſſolving plants. On this account alſo are recommended, Virginian and common ſnake-root; dulcamara; arnica; extract of hemlock and wolfsbane; tincture of antimony, and the like remedies, poſſeſſed of an attenuant

property. But I am of opinion, with Boerhaave ‖, Albertini §, and other judicious practitioners, that the decoctions of the woods, mercury, and volatile ſalts, as rouſing the action of the heart and arteries too much, or rarefying the blood, and increaſing its motion, when the preſence of a polypus is ſuſpected, either ought never to be employed, or with the utmoſt caution, after a due conſideration of every particular.

* L. c. † L. c. ‡ L. c. ‖ *Inſt. med.* § 826.

§ L. c. Albertini obſerved a man, in conſequence of uſing ſweet mercury to ſalivate himſelf, attacked with an obſtinate palpitation of the heart; as alſo another who died of an aneuriſm of the præcordia, both from the uſe of calomel, and from taking quickſilver; and, laſtly, a third perſon, from rubbing in mercury, was ſeized with an enlargement of the right auricle of the heart, and dropſy of the pericardium, in conſequence of which he died. Hence Paree has remarked, that internal aneuriſms frequently happen in thoſe who have repeatedly undergone mercurial friction for the cure of *lues venerea*. Likewiſe the employment of the *corroſive ſublimate* ought to be ſuſpected, as appears from the remarks of Bonelli on Baſſani.

279. With reſpect to the manner of living, pot-herbs, ripe fruits, and freſh-water fiſh, are preferable to animal food. Every thing glutinous, acid, or auſtere, and fermented ſpirits, nay, pure wine itſelf,—unleſs the ſuſpicion of a cachectic habit, or debility of the ſtomach, require otherwiſe, in which caſe it may be diluted with chalybeate water,—ought to be diſcarded, as being liable to increaſe the thickneſs of the blood, or to coagulate it, or rarify and agitate it. For this reaſon likewiſe, exerciſe of the body, eſpecially

in aſcending an acclivity, is ſuſpected to be hurtful. But gentle riding, in pure dry air, when the weather is calm, may be permitted. Violent emotions of mind alſo, and their cauſes, muſt be carefully avoided, eſpecially love, hatred, grief, and rage. For ſome of them derange the natural functions, others injure and interrupt, or excite too much, the motion of the heart, and rouſe its irritability; in conſequence of which, either crude and impure fluids are tranſmitted into the blood, or the lentor increaſing, a prediſpoſition to ſtagnation is occaſioned, or the veſſels, on account of the too great impetus, are preternaturally dilated, ſo that the polypus becomes more apt to increaſe, or they ſuddenly burſt.

CHAPTER XI.

CONCERNING ANEURISMS AND VARICES OF THE PRÆCORDIA.

280. WHAT in Latin is denominated *arteriæ dilitatio*, by the Greeks is named *aneuriſm*, and by the Arabians *hyporiſma*, or *aporyſma*, or *emboryſma*. All do not explain the etymology of the word aneuriſm in the ſame manner; for ſome derive it from one word, ſome from another *. Among the Greeks and Arabians it ſignified that

ſwelling of an artery which aroſe from its rupture or diviſion, and from the blood being effuſed into the neighbouring ſpaces †. In after times they deviated from this idea, and, adopting that of Fernelius and Veſali, they came to believe generally, that in aneuriſm the artery is not burſt, but only dilated ‡. But Sennert, probably following Hildanus ‖, has affirmed, that the nature of aneuriſm does not conſiſt merely in the dilatation of an artery, but alſo in the burſting of its internal coat,—for it was formerly ſuppoſed that an artery conſiſted of two coats,—while the external one remains intire §. But Freind, rejecting the opinion of Sennert, Fernelius, and Veſali, and adducing many obſervations relating to the ſubject, has endeavoured to reſtore the opinion of the ancients ¶. If I miſtake not, however, he has not accompliſhed his purpoſe. He only appears to have ſhewn, that aneuriſms, when they attain the greateſt degree of dilatation, at length burſt, not that they previouſly conſiſt in the rupture of an artery.

* Hieronymus Montius, as Lanciſi mentions (*De aneuriſ. in gener.* lib. i. propoſ. 1.), has converted the word *aneuryſma* into *enervatio*, from *a privative*, and νευρον, *nervus*. But Sylvaticus (*Tract. de aneuryſ.*) derives it from the word Ἐυρύνω, *dilato*. Laſtly, M. Aurelius Severinus (*De nov. obſerv. abſc.* c. 7. p. 170.) is of opinion, that it is to be derived from Ευρυνειν, *effluere*, or *exilire*. The etymology of Sylvaticus, however, ſeems to be preferable to theirs.

† Galen (*Lib. Iſagog. defin. med. et de tum. præt. natur.* cl. iii. c. xi.) obſerves: "An aneuriſm is the relaxation of a venous veſſel, or the diffuſion of the ſpiritual matter under the fleſh," &c. And

elſewhere; "When an opening is made in an artery, the affection is named an *aneuriſm*: it takes place when the artery is wounded," &c. From the words of Galen it is inferred, that he comprehended under the name of *aneuriſm* both dilatations of the veins and arteries, as well as the rupture of theſe veſſels. He there adds one of many cauſes of the complaint, *wounding*; which he explains more clearly in the book *De cur. rat. per ſang. miſſ.* 22. & 23.; obſerving, that a wounded artery is very apt to be attacked with aneuriſm. See Oribaſius, *Collect. med.* lib. vii. c. xiii. & xiv. Aetius, *Tetrab.* iv. ſerm. ii. c. li. and ſerm. ii. c. x. Actuarius, the ſon of Zacharia (*Meth. med.* lib. iii. c. ii.), mentions, that by this name the Greeks underſtood ſimple dilatation of an artery.

‡ See Bonet, *Sepulchret. anat.* lib. iv. ſect. 2. ‖ Freind, *Hiſt. med.* § *Id. ib.* ¶ L. c.

281. It is now, however, perfectly well aſcertained, that arteries, upon the cellular covering, with which they are ſtrengthened, being removed or deſtroyed, immediately ſwell, and become preternaturally extended, without any diviſion or laceration of the inner coat having taken place: nor can it by any means be denied, that aneuriſms have ſometimes ſuddenly been occaſioned by a wound, puncture, or contuſion; nor is it unreaſonable, or repugnant to experience, to ſuppoſe, that, on the internal ſtructure of the arteries being relaxed, eaten through, or lacerated, they ſhould ſwell out, and form a tumour. Hence three kinds of aneuriſms are eſtabliſhed: one conſiſting merely of the dilatation of an artery; another conſiſting in the artery being ruptured, or in any way opened, and pouring forth blood; and a third ariſing from both cauſes, no-

ticed by Hunter *; although by ſome it is rejected as fictitious †.

* *Medic. obſerv. and inquir. by a Society of Phyſicians in London*, vol. i. art. 37. † The authors of the *Europ. liter. journ.* vol. iv. an. 1758. p. 114.

282. The aneuriſm belonging to the firſt kind by ſurgical writers is named *true*; the ſecond ſpecies is called *ſpurious* *; and the third, as conſiſting of both theſe kinds, has been named by Hunter *mixed* †. Some add a *fourth* kind, namely, the *varicoſe aneuriſm*, which, they ſay, takes place when an *artery* and *vein* contiguous to each other are ſo perforated, that the blood paſſing from the former into the latter cauſes a *throbbing ſwelling* ‡; as, for inſtance, if the *vena baſilica*, when bruiſed, communicate with a wound of the *brachial artery* lying below ‖. Again, the *ſpurious aneuriſm* is diſtinguiſhed into *diffuſe* and *circumſcribed*. The former takes place, when the blood, being effuſed, ſpreads widely through the cellular membrane; the latter, when the blood is forced out of the cellular ſubſtance, or aponeurotic membrane lying above, in ſuch a way as to be collected in a narrow ſpace §. The ſpurious aneuriſm is, moreover, divided by Foubert into *primative* and *ſecondary*; of which the one ariſes immediately after the injury of an artery, and the other does not follow for ſome days after ¶.

* Platner, *Inſtit. chir.* § 420. 421. (†). † L. c.
‡ White and Thomas, *Comm. Lipſ.* vol. xviii. P. iii. p. 408; and

Foubert, *Mem. de l'Acad. Roy. de Chir.* vol. ii. p. 535. ‖ *Com. Lipſ.* l. c. § Hunter, l. c. ¶ L. c. (†). Aetius had already diſtinguiſhed aneuriſms into *true* and *falſe*; and Hunter is deceived in making Paulus Ægineta, who flouriſhed in the eighth century, the author of that diſtinction.

283. But Lieutaud ſeems to approve of the diſtinction of aneuriſms into *true* and *falſe*, only when they are external *. Which might likewiſe be ſaid of other nice diſtinctions. It is not, however, abſurd to ſuppoſe, that every kind may happen any where (181. 182.); and, if any difficulty ariſe, I imagine that it conſiſts intirely in accurately diſtinguiſhing theſe, as ſuch as are internally ſituate frequently eſcape being detected, either by the eyes or hands. It is not improbable, however, that true aneuriſm happens more frequently in the internal parts, and the ſpurious in the external, and eſpecially in the joints, as Platner very properly ſuggeſts †.

* *Prec. de med.* l. i. p. 146. † L. c. § 422. An inſtance of falſe aneuriſm of the of the internal parts may be found in Tabarrini (*Obſ. anat.* n. viii. p. 16.).

284. From theſe general remarks the nature of aneuriſm will readily appear. It is either an artery preternaturally dilated into a ſwelling; or it is a ſwelling in the neighbouring parts, occaſioned by the rupture or diviſion of an artery pouring out blood; or it is the combination of theſe. This morbid ſtate is in common to the veins alſo. Hence they either loſe their proper figure, and acquire greater capacity, or, being burſt, or divided, they pour

blood into the neighbouring cellular membrane. The firſt of theſe morbid ſtates is properly diſtinguiſhed by the name of *varix*, the other by that of *ecchymoſis*, or *ſugillatio*. For I do not agree with thoſe who, under the ſingle name of *aneuriſm*, comprehend both the affections of the veins and arteries.

285. I ſhall therefore proceed to ſpeak of theſe affections, both of the aneuriſmatic and varicoſe kind, but of thoſe only which take place chiefly in the præcordia, extending the ſpace of the præcordia more than Celſus has done *; with the view that almoſt the whole aorta, which is more frequently affected with aneuriſm, and the vena cava, which is liable to varix, may be conveniently comprehended in the ſame ſpecies. But before entering on the ſubject, it is proper to premiſe ſomething concerning the diviſion adopted by Lanciſi in enumerating the aneuriſms of the præcordia. He alſo has divided aneuriſms into *true*, or *legitimate*, and *baſtard*, or *ſpurious*; employing theſe words, however, in a ſenſe altogether different from that in which they are uſed by ſurgical and medical writers, which I have already obſerved. For he gives the name of *legitimate*, both to thoſe which ariſe from relaxation of the texture of the arteries, and to thoſe occaſioned by a ſolution of their continuity. And, on the other hand, he names thoſe aneuriſms *ſpurious*, which have been occaſioned at firſt, not by debility, relaxation, or reſolution of the fibres of the villi forming the arteries, but by an in-

creaſed impetus of the blood, which the uſual ſtrength, or power of reſiſtance of the arteries, is incapable of bearing without being burſt aſunder; ſo that relaxation or rupture of the villi, or coats, follows as the effect, but by no means as the original cauſe of the aneuriſm, and thus they may readily paſs into true aneuriſm †. It is proper alſo to obſerve, that the *true* aneuriſms of Lanciſi by Sauvages are named *paſſive*, and the *falſe* by him called *active* ‡.

* Lib. ii. c. iii. lib. iv. c. i. & viii. lib. v. c. xxvi. † *De aneuryſ. in gener.* lib. i. prop. v. ‡ *Noſol. meth.* vol. i. cl. i. ord. v. gen. 2.

286. But, with deference to Lanciſi, who is otherwiſe a moſt excellent writer concerning theſe affections, the aneuriſms, or dilatations, of the arteries to which the præcordia are liable, may be diſtinguiſhed principally into two kinds, whatever their origin be; namely, into thoſe in which the artery is expanded beyond the limits of nature in any direction, and into thoſe which are occaſioned by any part of an artery protuberating like a ſac from the ſide of a veſſel. For there can ſcarcely be any aneuriſm of internal parts, from which one or other of theſe kinds of dilatation can be abſent. This diviſion of aneuriſm, into *ſacciform* and *not ſacciform* *, was propoſed by Morgagni †, whom Schreiber ‡, Valcarenghi ‖, and others afterwards followed. But beſides the arteries, the heart alſo may be dilated in various ways; and

why may we not name ſuch dilatations with Ballonius § and Lancifi ¶, as well as many others, *aneuriſms*, dividing them in like manner into *facciform*, and *not facciform* *?

* Thoſe which are not *facciform*, we may, with Sauvages, likewiſe name *cylindroidea*. † *Adverſ. anat.* ii. *Aort. animadv.* xxxviii. and *Epiſt. anat. med.* xvii. n. 27. ‡ *Act. erud. Lipſ.* ann. 1731. *menſ. Aug.* p. 377. 378. || *De aneuryſ.* obſ. 1. § *Conſil.* 109. ¶ L. c. prop. 11.

287. The heart, to begin with it, is dilated, ſometimes intirely, ſometimes only partially, and not unfrequently is at the ſame time liable to other morbid conditions, as polypi, *ſarcomata*, various kinds of tumours, and alſo eroſion of its external ſurface. Inſtances of the intire heart being increaſed in bulk, and preternaturally diſtended, are very frequently to be met with in authors *. Sometimes dilatation is conjoined with the greateſt degree of extenuation or flaccidity of its ſides; ſometimes the thickneſs and ſtrength of them is increaſed, with a dilatation of all the cavities; ſometimes only its ſize ſeems to be increaſed, without the ſize of its cavities becoming greater than uſual. Sometimes, likewiſe, the coronary arteries and veins are obſerved to be aneuriſmatic and varicoſe. It is frequently ſo much extended, as, like a bullock's heart, to equal in bulk, or exceed, a head of tolerable ſize, or it is three or four times its natural ſize †.

* The firſt authors who have noticed ſuch enlargements are, Nicolaus Maſſa, an. 1534. *Introduct. anat.* c. 28. Veſali, *De hum. corp. fabrica*, l. i. c. 5. Carolus Stephanus, *Diſſ. part. corp. hum.* l. ii. c. 33. Ballonius, *Epid.* l. ii. in *Conſt. autum.* an. 1573. Andreas Laurentius, *Hiſt. anat. corp. hum.* l. ix. quæſ. 18. Whoever wants more ample information may conſult Bonetus, *Sepulchr. anat.* Schenck, *Pratyriſeon*, or *Obſ. de merar.* &c. Lanciſi, *De motu cordis et aneuriſ.* Kings-Macoppe, *De aort. polyp.* Morgagni, *De ſed. et cauſſ. morb.* Senac, *Trait. du coeur.* Paſta, *De cord. polyp. in dub. evocat.* Valcarenghi, *De aort. aneuryſ.* obſ. 3. Matani, *De aneuriſ. præcord. vitiis.* Van Swieten, *Comment. in* Boerhaav. *aph. de cog. et cur. morb.* Lieutaud, *Hiſt. anat. med.* De Haen, *Rat. med.*; where may likewiſe be found inſtances of dilatation, not only of the *heart*, but alſo of the *aorta*, *vena cava*, and other veſſels.

† Nicolaus Maſſa and Ballonius, in the paſſages quoted.

288. Sometimes only ſome parts of the heart, or one or two particular parts, are ſtretched out to an immenſe bulk. The right auricle, in particular, is liable to this morbid ſtate, ſo as ſometimes to acquire the ſize of half a heart, ſometimes of a whole one, and ſometimes that of the head of a new-born infant. Likewiſe the right ventricle becomes diſtended, as well as the left, and the auricle of the ſame ſide, in ſuch a manner, that ſometimes its rupture is threatened, or actually follows. But Lanciſi, as well as Morgagni, has obſerved more dilatations of the left ventricle than of the right; but fewer of the left auricle than of the right *. Van Swieten, however, affirms the contrary †. Sometimes only the right, ſometimes the left cavities, ſometimes both together are enlarged, as may be found in the anatomical obſervations of medical writers.

* *Epiſt. anat. med.* xviii. n. 5. † § 176.

289. Moreover, of the arteries ſituate in the præcordia, thoſe which are principally affected with aneuriſm are the pulmonary artery; the bronchial artery; the aorta, both at its beginning, in its arch, and in the deſcending trunk; the ſubclavian, carotid, and axillary arteries; the cœliac, hepatic, ſplenic, and meſenteric arteries; the emulgent and iliac arteries; and their branches. But it moſt frequently happens, that the arch of the aorta is affected, both on account of its being nearer the action of the heart, and on account of its receiving the whole impetus of the blood, with its arch. Frequently aneuriſms of the arteries are eroded, either in conſequence of there being depoſited in them an acrid humour, or one which is rendered acrid by ſtagnation, and pour out blood into the pericardium, into the cavity of the cheſt, or other neighbouring parts, both lacerated, eroded, and ruptured. Matani * witneſſed the rupture of the pulmonary artery in a perſon while laughing over his cups. Tabarrini obſerved it eroded and pouring blood into the pericardium †; Morgagni found the aorta nearly corrupted ‡; and Mery ſaw it, on account of its increaſed ſize, beginning to ſeparate from the baſe of the heart ‖. Le Prott § obſerved, in a courier who had died ſuddenly, the bronchial artery affected in the ſame manner. Sometimes they become bony within, or are lined with bony ſcales. Wepfer ¶ died in conſequence of the aorta being diſtended into an aneuriſm, on having be-

come offified here and there. Morgagni ** and Valſalva †† mention the aorta having become indurated with an aneuriſm three inches in diameter, and covered in the inſide with bony plates; and Albertini obſerved it covered with a bony cruſt ‡‡. Ruyſch ‖‖ and many others make mention of a monſtrous aneuriſm three inches above the heart, accompanied with eroſion of the inner coat of the aorta, which not unfrequently happens, eſpecially in perſons labouring under lues venerea. Not unfrequently the œſophagus and trachea are compreſſed with an aneuriſm of the aorta. A dilatation of it compreſſing the œſophagus and trachea is mentioned by Ramazzini §§; and another which ſo adhered to the œſophagus, that, in conſequence of the eroſion of the latter, blood paſſed into the ſtomach after the burſting of the aneuriſm, is mentioned by Matani ¶¶. Near the heart it is frequently ſo dilated, that it grows out to an immenſe ſize. Laurence formerly, and lately Paſchal Ferraria, mention its orifice having become ſo much enlarged in an aneuriſmatic heart, that it was capable of admitting one's arm ***.

* *De præc. morb.* p. 120. † *Obſerv. anat.* n. 8. ‡ *Epiſt. anat. med.* xvii. n. 28. ‖ *Hiſt. acad. Pariſ.* an. 1716. p. 51. § *Com. acad. Bonon.* vol. i. p. 345. ¶ De Haen, *in his life, Rat. med.* P. iv. p. 15. ** *Epiſt. cit.* n. 17. †† Morgag. *ib.* n. 23. ‡‡ *Com. acad. Bonon.* vol. i. p. 402. ‖‖ *Obſerv. Chir.* n. 38. §§ Morgag. epiſt. xviii. n. 17. ¶¶ *De aneuryſ. morb.* p. 120. *** *Delle mort. malat. ſubit.* p. 89.

290. Sometimes alſo aneuriſms ſtretch to va-

rious diſtant parts, break the bones lying oppoſite to them, obliterate cartilages, rendering every thing around them carious. Morgagni *, and before him Vater †, Schreiber ‡, and Flack ‖, deſcribe an aneuriſmatic ſac, in the right ſide of the aorta, of an oval figure, larger than a kid's head, juſt before the common beginning of the ſubclavian and carotid artery, attended with a fracture and caries of the right clavicle, and with the deſtruction of the four firſt ribs, at the part where they continue long cartilaginous. Sandifort § deſcribes a ſacciform aneuriſm twenty-one inches and a quarter in circumference, and ten and a quarter in diameter, between the ſecond and third true ribs, ariſing from the fore and right ſide of the aorta, and protuberating in the right ſide of the thorax, while it extended, on the left, beyond the ſternum, two inches diſtant from the clavicle; deſcending all the way to the right papilla, and internally ſtretching to the left ventricle of the heart, full of polypous blood, in conſequence of which the patient's pulſe had been weak and ſmall. Another ſacciform aneuriſm in the right ſide of the arch of the aorta, which had ariſen after great exertion of the voice and body, is to be found in the *Miſcellanea Variæ Literaturæ*, publiſhed at Luca ¶, which protuberated to the right ſide in ſuch a manner, as to burſt out between the ſecond and fourth ribs,—the third being intirely deſtroyed,—equalling the ſize of a gooſe's egg. Similar to this was that

which Morand ſaw **, which had opened a paſſage to itſelf from the arch of the aorta, between the ſecond and third ribs, and likewiſe between the third and fourth, and raiſed a double tumour externally. That one, alſo, is worthy of notice, which is publiſhed by Littre, as having ariſen in the arch of the aorta in conſequence of exceſſive reaching, which had continued for four days. In the middle it occupied the thorax, in the upper part it extended to the neck, aſcending all the way to the lower jaw. Morgagni relates, that in a man accuſtomed to play with the wooden ball, and addicted to the copious uſe of wine, the anterior ſide of the arch of the aorta had expanded itſelf into a large aneuriſm, which had partly deſtroyed the top of the ſternum, and extremities of the clavicles reſting upon it, and had partly rendered them carious, and had at length broken out at the upper part of the ſternum, under the appearance of a large boil ††. Guattani has recorded an inſtance of an aneuriſm of the aorta having ariſen in conſequence of violent terror, in a man of fifty years of age, attended with difficulty of breathing, fever, ceſſation of the left pulſe, and palpitation of the heart, and exhibiting a tubercle as large as a pigeon's egg above the left clavicle ‡‡. Albertini, out of Veſali, has deſcribed an aneuriſm in the aorta of a nobleman, about the vertebræ of the back, protuberating there into a ſwelling ‖‖. Inſtances of aneuriſms of the ſubclavian, carotid, axillary arteries, of the

bronchial artery, of the deſcending aorta, and of the cœliac, ſplenic, hepatic, and other arteries, may be found in the works of Valſalva, Morgagni, Nenci, Beauſſier, Fantoni, Le Prott, Haller, Lanciſi, in the *Pariſian Tranſactions*, in Boucher, Bander, Matani, Tabarrani, and many others.

* *Epiſt. anat. med.* xviii. n. 25. † *Ephem. N. C.* decad. iii. n. ix. obſ. 162. ‡ *Nov. Comment. Acad. Scient. Petropolit.* vol. iii. *phyſ.* n. iv. || *Ephem. nat. curioſ.* cent. v. obſ. 74. § *Nov. act. phyſ. med. N. C.* vol. iv. p. 21. ¶ Vol. ii. p. 184. ** *Mem. de l'Acad. Roy. de Par.* an. 1707. †† *Epiſt. anat. med.* xxvi. n. 9. ‡‡ *De aneuriſ. intern.* |||| *Com. inſt. ſcient. et art. Bonon.* vol. i. p. 402. et ſeq.

291. The veins in the præcordia, eſpecially the vena cava and pulmonary vein, are ſubject to *varices*. Inſtances of this kind alſo frequently occur in the writers already quoted. A vaſt dilatation of the *vena cava*, with a very great enlargement of the heart, is mentioned in the *Miſcellanea Natur. Curioſ.* tom. v. decad. 1. obſerv. xl.; as alſo an inſtance of enlargement of the vena cava and right auricle, diſtended with blood, in a man of fifty-four years of age, who died ſuddenly, is related by Lanciſi *; not to mention Morgagni, Albertini, and others. Moreover Parée, and ſeveral after him, make mention of the dilatation of the pulmonary vein. The *vena azygos* itſelf is not exempt from this affection. Heraclitus Manfredi †, in a phthiſical patient, found its trunk immenſely dilated to the ex-

tent of a ſpan, ſo that even after its burſting, which happened about the middle of its length, it reſembled the vena cava in width. But an obſervation of Portali's claims our notice ‡. He mentions, that in the body of a hypochondriac, who, in conſequence of the hemorrhoidal flux being ſuppreſſed, had fallen into a ſlow fever, which carried him off, the *vena porta* was ſo dilated as to reſemble one of the inteſtines, accompanied with a very heavy and ſcirrhous liver ‖.

* *De ſub. mort.* obſ. i. p. 243. & obſ. iv. p. 281. † Morg. *epiſt. anat. med.* xxvi. n. 29. ‡ *Hiſt anat. med.* T. 1. p. 125.

‖ Likewiſe the *vaſa brevia* are liable to varices. This appears from obſervations, and eſpecially from one of Columbus, *De re anat.* l. xv. p. 292. In Cardinal Cibo, the vein which ſtretches from the ſpleen to the mouth of the ſtomach was of remarkable magnitude, and on burſting filled the ſtomach and inteſtines with blood, occaſioning the patient's death; although, while he lived, he had loſt ſome pounds of blood by vomiting and ſtool. Braſſavola was preſent at this diſſection.

292. We ſhall now proceed to the enumeration of the cauſes from which theſe morbid ſtates originate. Of theſe ſome dilate the heart itſelf, or particular parts of it, or the *vena cava*, or pulmonary vein, or artery; ſome are very apt to induce aneuriſm, both of the heart, and of the aorta. To the firſt ſet belong moſt of the cauſes, which, as I have already obſerved (242. 243. 244.), induce palpitation of the heart. The chief of theſe, according to the obſervations of anatomiſts, ſeem to be, narrowneſs of the aorta *, or oſſification of

the beginning of it, or of the ſemilunar valves; narrowneſs or induration of the pulmonary artery; preſſure of its valves to the ſides of the veſſel; tumours, of whatever kind, in any way impeding the egreſs of the blood from the heart; external eroſion of the heart; repeated and long-continued efforts to vomit. Some authors likewiſe, among theſe cauſes, enumerate air evolved and expanded in the cavities of the heart.

* An aneuriſm of the heart, occaſioned by narrowneſs of the aorta, and induration of the valves, is recorded by Meckel, vol. vi. *Mem. de l'Acad. Roy. de Berlin*, an. 1750.; and by Morgagni, *Epiſt. anat. med.* xviii. n. ii. & n. vi.

I myſelf knew a girl of ſixteen years of age, who, when labouring under an aneuriſm in conſequence of narrowneſs of the aorta, from her infancy had been liable to tremors of the whole body, to great anxiety, palpitation of the heart, and irregularity of the pulſe. At the time when her catamenia flowed, all the ſymptoms were aggravated, nay, I have obſerved them increaſed by bleeding, or the employment of purgatives. At length ſyncope ſupervened, and put a period to her exiſtence.

293. To the other ſet are referred, a native and acquired debility of the heart or arteries; likewiſe too great rigidity *; violent motion; great exertion of the cheſt, as in blowing trumpets, or playing upon wind-inſtruments, driving a carriage, carrying loads, running, and dancing; loud ſinging, violent and long-continued coughing, mental emotions †, eſpecially long ſuppreſſed rage; grief; ſudden and great terror; blows ‡; a fall; geſtation; wounds; polypus; the employment of mercurial remedies ‖; ulceration of the internal coat of the arteries, or deſtruction of

the external ¶; too much blood, although this of itſelf be ſeldom ſufficient; bad-conditioned fluids; a hereditary taint **; lues venerea; hypochondriacal, hyſterical, rheumatic, catarrhal, hemoptoic, and herpetic affections; and, laſtly, immoderate eating and drinking. Lanciſi lays ſo much ſtreſs on the laſt cauſe, that, of an hundred aneuriſms, he aſſerts that at leaſt fifty were occaſioned in conſequence of it. Likewiſe the heart's being enlarged gives occaſion to aneuriſms of the pulmonary artery or aorta; becauſe, in conſequence of forcing the blood too violently into them, it muſt neceſſarily urge, diſtract, and gradually enlarge one or other, or both of them.

* "Aneuriſms in the aorta ſeem to ariſe from this rigidity, on account of the diſeaſe never happening in infants, very ſeldom in young people, and very frequently in people advanced in life, in conſequence of the external coat being ruptured by the force of the blood." Haller, *Opuſc. pathol.* obſ. xx.

† On this principle Albertini accounted for this complaint not unfrequently occurring in men, while it rarely happens in brute beaſts (vol. i. *Com. inſt. ſcient. et art. Bonon.*). What belongs to this cauſe may be inferred from this, that if ſudden, mixed, contending, and violent paſſions take place, aneuriſms frequently ariſe, as it were, inſtantly; while varicoſe conditions generally take place ſlowly, in conſequence of ſimple, long-continued, and ſevere cares.

‡ Inſtances will be found in Lanciſi, l. c. prop. 21. Van Swieten, *Com. in* Boerhaav. aph. 176. Valcarenghi, obſ. 11. De Haen, *Rat. med.* par. iv. c. ii.; and others. || Albertini, l. c. § Haller, *Prim. lin.* n. 34. ¶ Lanciſi, *De aneuryſ. in gen.* prop. 47. ** Albertini, lib. cit. n. 65. Each of them has obſerved, that aneuriſmatic vitiations of the heart and neighbouring parts have deſcended intirely from the ſame hereditary taint, handed down from father to ſon.

THE DIAGNOSIS.

294. It is doubtleſs a very difficult matter to aſcertain each of theſe morbid ſtates (188. to 191.), and the various cauſes (192. 193.) from which they have proceeded. But that the inveſtigation may be attended with leſs difficulty, we may obſerve, with Albertini *, that in morbid ſtates of the præcordia, independent of other ſymptoms ſhortly to be mentioned, on applying the hand to the thorax, or to the ſpot in which the diſeaſe is, an unuſual motion, either with or without pulſation, is perceived, or not at all. Generally the motion, which has conjoined with it an unuſual and long vibrating pulſation, is perceived in a ſimple aneuriſmatic dilatation, either of the intire heart, or of the auricle, or left ventricle, or of the aorta, or ſubclavian, carotid, axillary, or other arteries, which proceed from the deſcending aorta. But the motion which is unaccompanied with ſuch a pulſation, or is ſcarce perceptibly felt, is generally conjoined with dilatation in the trunk of the vena cava, or right ventricle †; or of the pulmonary artery, or vein; or of the bronchial artery; or of the ſubclavian and jugular veins. The obſerving of the preſence or abſence of the motion in theſe complaints is of the greateſt ſervice; although it does not reſt upon ſo uniform a law, that, for many reaſons, it may not be ſometimes very much varied, in conſequence of the degree, figure, and magnitude of the dilata-

tion, of the variety of its ſituation, combination, and other circumſtances.

* *Com. inſt. ſcient. et art. Bonon.* vol. i. p. 83. *De difficil. reſpirat. vitiis.* In his *Opuſcula.* † Albertini refers dilatation of the right auricle of the heart to morbid ſtates, which he names *varicoſe*, becauſe it induces a motion which is almoſt imperceptible, and, as it were, without any pulſation. But Burggrave (*Act. acad. nat. cur.* vol. x. an. 1754. edit. Norimb. p. 140.; and vol. iv. par. iv. p. 684. *Com. Lipſ.*) mentions, that in aneuriſm of the right ventricle, the ſhock of the heart is not intirely felt under the left breaſt, but under the ſternum, and likewiſe in the right ſide of the thorax. To whoſe authority, I ſhould aſk, ought greater credit to be given? Albertini conſulted experience alone, which is truer; while Burggrave appears to have attended to the nature of the place. But the pulſation ſeems to be deducible, not from the increaſed capacity of the heart, but from its violent contraction. Is this greater in dilatation of the right ventricle of the heart? Is the right ventricle in the right ſide, or behind? it appears not. Perhaps, therefore, he indulged too much in probability. This appears from what he himſelf confeſſes, that ſometimes the right ventricle has not been found in a ſtate of aneuriſm, when the pulſation had been perceived in the right ſide, but the arch of the aorta itſelf diſtended on the right ſide.

295. When the pulſation, however, is not very great, but moderate, or much leſs than the magnitude of the complaint cauſes, or when the condition of the place renders it in ſome degree leſs ſenſible, the fingers are to be preſſed to the neck, near the ſides of the trachea, and under the clavicles, while at the ſame time the motion of the carotids, or the undulations of the jugular veins, are attentively examined; and this ought to be frequently repeated, eſpecially after meals or exerciſe, or mounting ſtairs, that it may not eſcape

the obſervation of the phyſician. For there is a moderate pulſation, and much ſmaller one, or none at all, when the heart, although in a ſtate of aneuriſm, has become hard, and, as it were, tendinous, or flaccid; or when the ſides of the dilated artery have become preternaturally indurated; or contain within them an oblong polypous concretion of blood; or become completely lined with a cartilaginous or bony coat. Which taint, when it happens, may be known, if it has been preceded by a pulſation, which has been of long ſtanding, but has gradually ceaſed, in conſequence of which the patient has become better. But when, without this cauſe, the pulſe has become more obſcure, it is then manifeſt that the ſtrength is failing, and death approaching.

296. Beſides, the practitioner muſt carefully inquire, whether the motion perceived by the hand recede from the natural one, or not, and in what manner, and how far it does ſo? Whether it ſeem to be in the proper ſeat of the heart, or in the neighbourhood? Whether the part retain its natural bulk, or ſhew a larger? For it is a difficult matter to diſtinguiſh the pulſation of the heart from the pulſation of an aneuriſm ſituate near it, unleſs all theſe particulars be carefully inveſtigated. If the ſeat of the diſeaſe be without the cheſt, where the ribs cannot be an impediment to the hand, we muſt conſider well whether the diameter of the artery be really increaſed, —which a perſon acquainted with anatomy will

eaſily perceive,—or whether it be natural. For if the aorta or cœliac artery beat violently and quickly, and if that take place without any increaſe of its diameter, it will be a proof that no aneuriſm is preſent.

297. On an accurate inveſtigation of theſe points (295. 296. 297.) being made, either ſymptoms indicating one or other morbid ſtate are diſcovered, or none. If there be any, they may be confirmed; if none, their place may be ſupplied by others derived elſewhere: namely, from the morbid ſtate of the reſpiration; from the pulſe; from ſome ſenſe either of weight or conſtriction, or of ſlight pain, occaſionally affecting the region of the heart, eſpecially if inordinate motion of the heart precede or be conjoined with it; from the patient's lying or ſleeping on either ſide, eſpecially the left, with difficulty; from interruption of the ſleep, eſpecially at the beginning, and from the patient's being occaſionally obliged to ſhift his poſture. At the beginning of the diſeaſe, however, or ſhortly after, the reſpiration is not affected, unleſs after quickened motion, or it is only ſlightly ſo, and generally at the commencement of the patient's firſt ſleep occaſions ſome neceſſity for ſhifting the ſide, or ſitting up; but during the progreſs of the diſeaſe, likewiſe the injury of the reſpiration itſelf increaſes, or frequently from a ſlight cauſe is induced. For aneuriſms either of the heart or aorta, or of any

other artery within the thorax, by their bulk compreſs the lungs, interrupt the motion of the blood through them, and frequently preſs upon the diaphragm itſelf, thus interrupting the free reſpiration *. Likewiſe an aneuriſmatic dilatation of the aorta, where it embraces the left branch of the bronchia, compreſſes that branch which is naturally narrow, in ſuch a manner that the inſpiration cannot take place through it †. The pulſation itſelf, in various ways receding from the natural habit of the patient in greatneſs or ſmallneſs, in tenſion, or ſoftneſs, or vibration, or frequency, or irregularity, or intermiſſion, or in any other way, if it continue ſo uniformly, whether in both or in one or other arm, as frequently happens in a doubtful caſe, will throw no ſmall light on the ſubject; provided attention be paid to the remarks already delivered concerning aſphyxia, and ſmall and intermitting pulſe (Chap. VIII. of this Vol.). But every kind of irregular motion or pulſation of the heart, and injury of the reſpiration, do not immediately imply a morbid ſtate of the præcordia, as I have frequently obſerved elſewhere. This is ſufficiently evinced by hypochondriaſis and hyſteria; chloroſis; increaſed action of the heart; or diminiſhed capacity of the cheſt; or both together; or a warm temperament, and the prime of youth; or the pulſe being naturally irregular, or intermitting, eſpecially in children, in old people, in perſons labouring under confirmed gout, or when an at-

tack of it is threatened, in whom, if a fever ſupervenes, it becomes natural; as it recedes from the natural ſtate in fevers of a bad kind, without any organic injury, and paſſes into an intermitting one.

* Morgagni, *Epiſt. anat. med.* xvii. n. 1. † Portali, *Mem. de l'Acad. Roy.* ann. 1769.

298. Theſe ſymptoms, when either all or ſeveral of them are combined, when they continue long and uniform, and are unaccompanied with any other manifeſt diſeaſe of the cheſt, may warn us of incipient or already formed complaints of the præcordia, and ſtill more if a rheumatic pain, as it were, eſpecially at the commencement, be felt at the upper part of the thorax, at the ſhoulders, and from thence to the middle of one or both arms, and chiefly at the ſhoulder-blade; and laſtly, if the cauſes already enumerated (293.) be preſent. When the complaints are aggravated, the craſis and diſtribution of the blood being deranged, not unfrequently on account of the difficult reſpiration, attended with orthopnœa, which at length comes on, the veſſels of the lungs become ſomewhere turgid and diſtended, or are either lacerated, ruptured, or eroded, in conſequence of which frequently in ſome the blood is diſcharged by ſpitting, in others lymph and ſerum come off. Hence coughing, congeſtions, and pleuritic pains ſupervene in peripneumony. To theſe frequently ſucceeds, or ſometimes precedes, in conſequence of the reflux of the blood

being retarded, or the lymphatics burſting, or a greater quantity of fluid being poured out by the exhalants than can be taken up by the abſorbents, —dropſy of the pericardium, thorax, and abdomen; and from ſimilar cauſes, conſtant ſleep, confuſion of thought, apoplectic affections, obſtruction of the liver, and œdematous ſwellings.

299. So far of the common ſymptoms of aneuriſms. We now proceed to thoſe peculiar to each kind. When the heart, therefore, has become aneuriſmatic in each cavity, ſuch an affection is diſtinguiſhed by the following marks. On applying the hand to the left breaſt, the ſtroke of the heart is not only perceived there, but under the ſternum, extending alſo to the ſides farther than the natural ſize of the heart occaſions; and its pulſations are ſo confounded, that they can ſcarcely be counted. Nay, an effect is produced, as if the whole cheſt from the neck to the *ſcrobiculus cordis* from ſide to ſide, were occupied by ſeveral hearts, beating together irregularly; and this effect is more or leſs violent, in proportion to the magnitude of the aneuriſm. Upon any motion of the body, the reſpiration becomes more laborious, and the palpitation of the heart more troubleſome *. The patients alſo cannot lie upon the left ſide of the thorax, in which the pain, or weight, is generally felt: they are occaſionally attacked with oppreſſion of the cheſt, anxiety, orthopnœa †, and ſlight fainting-fits. Sometimes they both breathe and ſwallow more con-

veniently, when the body is bent forwards ‡. The pulſe is generally great, hard, violent, vibrating, and at firſt ſlow, afterwards likewiſe hard, but quicker and more irregular ‖. Sometimes, however, it is natural §; likewiſe ſmall, fine, and intermitting; but in that caſe, extenuation of the ſides of the heart, or too great flaccidity, or ſome other morbid ſtate, or diminution of the nervous influence, is conjoined with it. It frequently, alſo, happens, that an aneuriſmatic heart falls down, depreſſing the diaphragm and the ſtomach, and occaſioning uneaſineſs in the region of the latter. A prolapſus of the heart is then ſaid to take place, and its pulſation is perceived chiefly in the left hypochondrium, or in the epigaſtrium, in ſuch a manner that it is frequently miſtaken for the pulſation of the cœliac artery ¶.

* Burggrave in *Act. acad. N. C.* vol. x. ann. 1754. *edit. Norimb.* † Morgagni, *Epiſt. anat. med.* xvii. n. 6. 7. 8. 9. ‡ *Idem. epiſt.* xviii. n. 18. 19. ‖ *Idem. epiſt.* xvii. n. 7. § *Id. ib.* n. 8. 9. ¶ *Id. ib.* n. 17. & 18. likewiſe epiſt. xv. n. 53.

300. But aneuriſms of the aorta, if they be contained within the thorax, generally betray themſelves by the pulſations, either above, or to the right or left, far from the ſeat of the heart; ſometimes likewiſe they are manifeſt in the neck, temples, and back. The dyſpnœa alſo is aggravated by motion, the pulſe is hard, rather ſlow and vibrating, not intermitting, nor irregular (unleſs they be conjoined with other morbid ſtates). Some-

times it is ſmall and weak; and the patient can lie readily upon either ſide *. Frequently, when they have acquired great bulk, they compreſs both the trachea and the bronchia, and eſpecially the œſophagus, in conſequence of which, ſuffocation, and in ſeveral parts ſome impediment to the deglutition, ſupervene †, eſpecially when the patient lies on his back. Not unfrequently, long-continued and ſevere pains, which are relieved by a diſcharge of flatus, diſtreſs the patient in that ſide; in conſequence of which he is apt to believe that the complaint ariſes from wind. This, however, is by no means the caſe. An aneuriſm, rather by compreſſing the œſophagus, whether by reſtraining the flatus in the ſtomach, or by exciting a ſpaſm, gives riſe to a new uneaſineſs, which is at length relieved by the diſcharge of flatus, or the relaxation of the ſpaſm ‡. Sometimes, likewiſe, the patients are ſenſible of the aſcent of a kind of *aura;* in conſequence of which they ſuppoſe that the diſeaſe is *convulſive.* But this opinion is generally refuted by the preſence of other ſymptoms, and chiefly by the neceſſity the patient is under of ſtooping forward ‖.

* Morgagni, epiſt. xvii. n. 17. & 21. & 26. *Epiſt. item* xviii. n. 22. to 15.

† *Id. ib.* n. 25.

‡ *Id.* epiſt. xvii. n. 14.

‖ *Id.* epiſt. xviii. n. 18.

301. According, therefore, as more or fewer, or one or other of theſe ſymptoms (295. to 300.)

precede, accompany, or follow any aneuriſmatic diſeaſe of the præcordia, the diagnoſis will be more or leſs certain, or doubtful. It is likewiſe extremely obſcure when the motion of the heart, as ſometimes happens, is almoſt perpetually varying, and an organic injury is likewiſe found within the heart, as in the neighbouring parts; and, laſtly, when ſeveral kinds of morbid ſtates are variouſly combined, ſo that the ſymptoms peculiar to each cannot be diſcriminated, until the body has been diſſected. Concerning which the greateſt acuteneſs and deliberation are neceſſary.

302. The conſideration of the diameter of an artery, when its pulſation gives reaſon to apprehend the preſence of an aneuriſm, is always very neceſſary, but eſpecially when the arteries lie more open to the hand; as thoſe eſpecially do which are ſituate in the lower part of the abdomen. For, by attending to this alone, Albertini, whoſe experience was very great, was never deceived in diſtinguiſhing an aneuriſm from other morbid conditions of the arteries. As, therefore, mere pulſation of the arteries cannot immediately be ſet down as a ſymptom of aneuriſm, we muſt guard againſt ſuſpecting its commencement whenever a great pulſation is perceived in the lower part of the abdomen. For many circumſtances may occaſion it. In the firſt place, the greateſt degree of emaciation may render the pulſations of the deſcending aorta, and its ramifications, more manifeſt,

Inſtances of this kind will be found in the works of Berengari *, Martiani †, and others. Likewiſe exceſſive fulneſs; compreſſion of the arteries; a phlegmonic, ſcirrhous, or any other kind of tumour, ſituate in the pancreas, meſentery, or elſewhere, compreſſing the arteries; obſtructions; ſpaſms; and irritations of various kinds. Under this head come the ſpurious aneuriſms of Lanciſi, which conſiſt merely in an unuſually violent pulſation of the arteries, without dilatation. Marggraff ‡ obſerved a pulſation reaching from the umbilicus to the *ſcrobiculus cordis*, ſo great that it could frequently be overheard by the byſtanders, which laſted for thirty-four years. And as he ſuſpected that it did not ariſe from a genuine aneuriſm of a remarkable artery in the meſentery, becauſe it appeared ſcarce at all enlarged in diameter, but from a ſpurious one, as Lanciſi called it, and as, on account of its duration, he conſidered it as incurable, having at length given ſome remedies,—after a great variety which had been adminiſtered by others,—at leaſt with the view of correcting the crudity of the fluids, the pulſation, contrary to all expectation, in a ſhort time was completely removed ‖. Tabarrani § found not only a pulſation in the epigaſtric region, but likewiſe a ſwelling as big as the fiſt, conjoined with other ſymptoms of genuine aneuriſm. But, in place of it, upon opening the body, he diſcovered a ſwelling at the centre of the meſentery, which compreſſed the aorta, and

was raiſed by its pulſations. Morgagni records a remarkable caſe of a middle-aged ſhoemaker, accuſtomed to drink much wine, who ſhewed all the ſymptoms of an aneuriſm of the aorta within the cheſt, and, beſides, a manifeſt pulſation all over the body; in whom, however, upon diſſection, no dilatation of the arteries, or manifeſt internal injury of them, was any where diſcoverable ¶.

* *Comment.* ix. *Super Anat. Mundini.* † *Epid.* vii. n. 3.
‡ *Act. N. C.* vol. vi. obſ. 131. || Morgagn. epiſt. xxxix. n. 20.
§ *Obſerv. anat. med.* ii. n. 9. ¶ *Epiſt. anat. med.* xxiv. n. 34.

303. Likewiſe the diagnoſis of the morbid ſtates referable to the varicoſe kind ſeems to be difficult. For it is not eaſy to aſcertain thoſe which occaſion a motion free of pulſation, or a very ſlight and obſcure one; it is ſtill more difficult to aſcertain ſuch as have not only an obſcure, but likewiſe a deep-ſeated and confuſed motion; and moſt difficult of all to diſcover thoſe which are attended with none, or ſcarce a veſtige of any. Of this number are thoſe which, ariſing within the pericardium, are ſo checked by the pericardium itſelf, either greatly indurated, or firmly adhering to the heart, that their motion is not at all perceived by us. A dilatation of the trunk of the vena cava, or of the right auricle of the heart, or of all its right cavities, according to Lanciſi * and Albertini †, with whom alſo Morgagni agrees ‡, is generally attended with a great and regular pulſe. It appears from obſervation, however, that it has likewiſe ſometimes been ir-

regular ‖ ; nay, ſome authors inform us, that a varicoſe aneuriſm is denoted by a ſmall, and by no means vibrating pulſe. In it, moreover, ſtraitening and oppreſſion of the heart, together with fainting, diſtreſs the patient, which laſt ſometimes terminates in the *ſyncope cardiaca*. Many circumſtances, however, occaſion great variations in theſe ſymptoms; namely, firm adheſion of the pericardium to the heart; other organic injuries conjoined with it; a different and morbid proportion of the parts contained in the præcordia; the action of the heart being either natural or morbidly increaſed; the diſeaſe itſelf, according as it is either ſimple or complicated, recent or of long ſtanding, and the like. Albertini §, on opening the body of a man, who, in conſequence of quick walking, uſed to be ſeized with oppreſſion of the heart and fainting, with a low pulſe, found bony concretions occupying the ſinus falcatus and right auricle of the heart,—which is frequently liable to dilatation,—while it was ſo dilated as to appear rather membranous than muſcular. He has likewiſe ſeen others who, in an advanced ſtate of the diſeaſe, contrary to what generally happens in it, could neither riſe out of bed, nor ſit up, without being attacked with oppreſſion of the breathing, and fainting; and who were therefore obliged to almoſt conſtantly lie down. Similar inſtances are recorded by Morgagni, and eſpecially two worthy of remark, of which one ¶ ſhews the right auricle dilated to the ſize of a large purſe, with increaſed

bulk of the heart, in conſequence of which, during the laſt days of the patient's life, ſuch an orthopnœa was induced, that he could not even complain of the oppreſſion of the breaſt, while the pulſe was of its natural ſtandard; the other **, in which very great enlargement of the right auricle was ſucceeded by orthopnœa, a hard, quick, and ſmall pulſe, and dropſy of the cheſt, pericardium, and abdomen.

* *De aneuryſ.* lib. i. † L. c. p. 390. ‡ *Epiſt. anat. med.* xviii. n. 27. || Morgagni, *ibid.* § L. c. ¶ Morgagni, epiſt. xviii. n. 8. 9. ** *Ibid.* n. 10.

204. Lanciſi mentions as a pathognomic ſymptom of preternatural dilatation of the right auricle and ventricle, either pulſation or fluctuation of the jugular veins. For he ſhews, that in conſequence of dilatation of the right auricle and ventricle, the orifice in common to them, which is provided with the tricuſpid valves, is ſo dilated, that theſe being ſtretched, and neceſſarily opening, a portion of the blood is forced back by the conſtriction of the ventricle through their chinks into the vena cava; giving riſe to an evident dilatation of the jugular veins, and ſhortly, owing to the relaxation of the ventricle, to a ſimilar alternate conſtriction, which, by incautious obſervers, may be miſtaken for a dilatation and conſtriction of the carotids. But it ought to be remembered, that this ſymptom is ſometimes conjoined with chloroſis alone; with pregnancy; with the tricuſpid valves not being ſtretched, but only being

forced out by the blood, during a ſtrong contraction of the heart (as happens in palpitation), and propagating the concuſſions to the blood of the veins *; with too ſmall capacity of the left ventricle, or with any other obſtacle oppoſed to the paſſage of the blood from the heart, exerting its effect upon the right cavities of it; and, laſtly, with ſome, if not all of the tricuſpid valves having become ſtiff or inflexible, or with eroſion, rupture or relaxation of their cords, in conſequence of which they either do not ſufficiently ſhut the orifice to which they belong, or if they do, they may ſtill be forced outwards, and inverted, and repel the blood into the veins †.

* Homberg. *Memoir. de l'Acad. des ſcien.* ann. 1704. from this cauſe obſerved a *palpitation*, not only of the *jugular veins*, but likewiſe of the veins of the arm. † Morgag. epiſt. xviii. n. 9. 10.

305. That we may, therefore, avail ourſelves properly of this ſymptom, we muſt guard againſt miſtaking for an *alternate pulſation of the jugular veins*, what is only a kind of turgeſcence of them, ſucceeding to a violent inſpiration and expiration *, or that tremulous motion ſometimes excited by the vibrations of the carotid arteries cloſe to them. We ought next to inquire, whether the palpitation and concuſſion of the jugular veins be conjoined with anxiety and palpitation of the heart, fainting, a great and irregular pulſe, and other ſymptoms of theſe affections (303.). For this ſymptom will then denote a dilatation of the right cavities of the heart; otherwiſe not.

But as the jugular veins may throb and beat, either on account of a morbid ſtate of the right auricle, or of the right ventricle, Morgagni points out the method of diſtinguiſhing them. He obſerves: "You may conclude that they throb from the contraction of the right ventricle, if, at the ſame time that you fix your eyes upon them, on applying your fingers to the temporal arteries, or thoſe of the wriſt, you evidently perceive the veins riſe at the ſame inſtant with the artery: while the contrary happens, if they do not beat in conſequence of the contraction of it, but of that of the right auricle †."

* Valſalva obſerved the jugular veins to ſubſide during inſpiration, and riſe during expiration, while Morgagni noticed the contrary to take place. Epiſt. xix. n. 33. † *Epiſt. anat. med.* xviii. n. 12.

PROGNOSIS.

306. ANEURISMATIC and varicoſe affections are very dangerous and diſtreſſing, eſpecially when they have been of long ſtanding, or have given riſe to other complaints. For no cure has hitherto been diſcovered for them. On the whole, young and robuſt people, on being attacked with theſe complaints, are ſooner cut off; while ſuch as are advanced in life, or of a debilitated habit, ſupport their violence longer. Women alſo bear them better than men. Monks are frequently affected with theſe complaints, and likewiſe bear

them for a length of time. Sometimes the complaint, in conſequence of an hereditary taint, is tranſmitted from father to ſon. Albertini records an inſtance of five brothers having been carried off by theſe complaints, ſome ſuddenly, and others ſlowly. Thoſe who die ſuddenly are cut off either in a ſtate of ſyncope, or in conſequence of the ſudden burſting of the aneuriſm or varix. Sometimes, if the rupture at firſt be not conſiderable, but pour out blood ſlowly from a narrow opening, the patients ſurvive it for a few hours, at length gradually ſinking under it. Sometimes, likewiſe, without any rupture happening, being ſeized with an aſphyxia, or ceſſation of the pulſe, they drag out their exiſtence for a few days longer. When taken early, however, theſe complaints may be alleviated at leaſt, if not removed, and ſome hopes remain of prolonging the patient's life. Nay, if they can be diſtinguiſhed in a naſcent ſtate, they might even be partly got under, and prevented from proceeding ſo rapidly to a fatal termination.

THE CURE.

307. THE cure ought to be directed to diminiſhing the *impetus* of the blood upon the veſſels, and increaſing their reſiſtance; to correcting the whole maſs of fluids, if they labour under any taint; to repair the morbid ſtructure of the organs; and to reſtore to its original and proper condition whatever preternatural concretion or

adheſion has formed any where. We muſt endeavour, however, while we attempt to blunt the force of the fluids flowing into the veſſels, or to increaſe that of the veſſels acting again on them, not to exceed bounds, but only to effect as much as is neceſſary; which, I confeſs, it is very difficult to do. We ought, therefore, to begin the cure with a very ſpare, bland, and cooling diet; with the greateſt quiet both of body and mind; with watery drink; and bleeding. How much is to be aſcribed to bleeding appears from an obſervation of Garzia. He allowed the blood to flow in a man, whoſe artery he had opened, until ſyncope came on; and then, after in a great meaſure exhauſting the veſſels, he applied a compreſs to the wound, which ſoon healed, without any aneuriſm following. The quantity to be drawn ought to be accommodated to the patient's age, temperament, habit, and ſtrength, and to the climate, ſeaſon, and other circumſtances; and it ought to be repeated as may be found neceſſary. Generally when the diſeaſe is incipient, or not far advanced, that is, when it has not paſſed its height, it is ſerviceable. It proves hurtful, however, in an advanced ſtate of the complaint, when it has gone beyond that period *. It likewiſe affords the moſt immediate relief in violent affections of the reſpiration and oppreſſion at the heart, particularly if expectoration tinged with blood, or pure blood, be paſſed; but it muſt be

employed ſparingly and cautiouſly, that there may be room for employing it again, which frequently becomes neceſſary, and that the patient's ſtrength may not ſink under it. It is likewiſe employed with great advantage in the ſpring and autumn, to prevent the ſymptoms and progreſs of the complaint. Nor ought any ſwelling of the extremities to deter the practitioner from it. For frequently, after the drawing of blood, upon a freer circulation being reſtored, ſuch ſwelling, as being the effect of a morbid condition of the parts, is made to diſappear †. This remedy, however, is contra-indicated by a ſwelled face, by a cachectic habit, or by a venereal, or ſcorbutic taint of the fluids, which announce that the complaint is about to paſs into dropſy or anaſarca. We ought to deſiſt from it, alſo, when it no longer brings with it the uſual alleviation. Morgagni ‡ alſo tells us, that we ought to guard againſt bleeding a patient much againſt his will. For it ſometimes happens, that during the operation, or ſhortly afterwards, the aneuriſm burſts, and the patient expires; which, it ſeems probable, may be derived from the increaſed velocity of the blood occaſioned by veneſection.

* Albertini, l. c. p. 394. † Morgagni, *epiſt. med.* xvii. n. 31. 32. ‡ *Id. ib.*

308. It is hurtful, alſo, to purge the belly with powerful cathartics. For it is well known that ſome patients, in conſequence of the imprudent

employment of ſuch remedies, have been cut off during their very operation, or ſhortly after. The timely employment of gentle laxatives and clyſters proves harmleſs. Nay, when the difficulty of breathing, and the ſwelling of the external parts are aggravated, it is proper to employ, clyſters alone compoſed of prunel-ſalt, antimoniated nitre, or turpentine diſſolved with the yolk of an egg, or honey of roſes. Sometimes alſo ſpaſmodic affections of the belly require very gentle and anodyne injections.

309. Likewiſe acrid diuretics ought to be very cautiouſly employed, as experience has ſhewn, that by means of them the motion of the blood is excited too much, or nephritic pains induced, or hydropic ſwellings ſometimes ſo much increaſed, that the reſpiration is almoſt overpowered, or, although the patients at firſt appear to be relieved by a copious diſcharge of urine, they are ſometimes notwithſtanding exhauſted with a ſudden, or at leaſt not a ſlow reſolution of the ſtrength, and unexpectedly cut off. The following are conſidered as being extremely mild, and almoſt void of harm, namely, ſyrup of turpentine, eſpecially prepared with ſugar of roſes, or quinces; the infuſion, or powder of millepedes; nitre; and the ſpirit of the terra foliata tartari;—which are extremely well accommodated to the complaint, eſpecially in anxiety of the cheſt, with an increaſed œdematous ſwelling of the parts. In that caſe, alſo,

oxymel of ſquills, Spaniſh honey, the volatile ſalt of amber, or its eſſence, may be employed. But Albertini particularly recommended the juice of plantain, both recently expreſſed, and alſo boiled to one half, and cauſed it to be drunk either pure, or mixed with the powder of the ſhells of ſnails. In the ſame manner, likewiſe, all heating and exciting remedies ought to be avoided. Likewiſe the remedies poſſeſſing a ſtrengthening and vulnerary property, as it is called, ought to be of a mild kind; eſpecially of that kind which preſerves the blood gently fluid, if it appear to be too thick, or, if otherwiſe, which reſtore its due craſis to it. For theſe complaints are frequently accompanied with one or other morbid ſtate, namely, either too great lentor, or too great fluidity.

310. Of the claſs of alteratives, therefore, thoſe ought to be ſelected which are adapted to the cauſes of the diſeaſe, and indications already laid down. Generally ſuccory, dandelion, fumitory, and ſorrel, prove remarkably cooling, eſpecially when boiled in whey. If, at the ſame time, ſomewhat of an aſtringent property be required, or it be neceſſary to gently draw off a ſerous colluvies by the kidneys, comfrey, plantain, agrimony, ground-ivy, hypericum, and ſimilar plants, may be added. But when the whey, whether it be cows or goats, or the decoctions of the vegetables juſt now mentioned, do not anſwer, we may ſometimes ſubſtitute with advantage the ſoup of river-crabs, and of the fleſh of frogs, in which

the flowers of hypericum, or of ground-ivy, have been ſlightly decocted. To theſe, moreover, according to the various combinations with other diſeaſes, are added, ſometimes antivenereal, and ſometimes antiſcorbutic remedies, as, the powder of coral, or oſteocolla, ſometimes ſtimulants and antiſpaſmodics. They may be conveniently received either upon quinces, or conſerve of roſes, or extract of hypericum, or any other proper vehicle. It is ſometimes uſual to add the *tinctura martis*, extracted by means of the juice of ſweet apples, or iron filings reduced to a fine powder above porphyrites, or other remedies, according as the habit of body, condition of the fluids, affections of the hypochondria, œdematous ſwellings, ſyphilis, &c. require particular notice.

311. In the greateſt difficulty of breathing,—which frequently recurs periodically, as it were, or at leaſt occaſionally attacks the patient more violently,—as we cannot always let blood (307.), we muſt have recourſe to other remedies to relieve the reſpiration. Among theſe the principal are, volatile remedies applied to the noſe, as ſpirit of balm, of human blood, of ſal-ammoniac, and vinegar of wine; of theſe even ſomewhat may be given internally, as a few drops of the ſpirit of ſal-ammoniac, or ſoot, or of the ſpirit of ſuccinated hartſhorn dropped into water of hyſſop, or of maiden-hair. Likewiſe the freſheſt oil of almonds, or common olive oil, is generally em-

ployed with the greateſt advantage, either by a ſpoonful at a time, or to the extent of a few ounces. But if it be neceſſary likewiſe to purge the belly, that the reſpiration may become freer, before expreſſing the oil, a little rhubarb may be added to the almonds. But the moſt efficacious remedy is friction of the extremities, or immerſion of them in warm water. For, in whatever manner the blood ſtagnates and accumulates in the arteries and conſequently in the aneuriſm itſelf, the very great anxiety excited by it immediately ceaſes, upon the other parts being relaxed by means of the warm water. Hence immerſing the arms, hands, and feet in it, or wrapping them up in wet cloths, both prevents the paroxyſm and cuts it ſhort. The remedy is ſerviceable alſo when the left arm, which frequently happens, is painful and torpid. While the limbs are thus fomented with warm water, if friction of them be conjoined with it, revulſion more readily takes place; and if any convulſion accompany the complaint, it is reſolved. Nay, friction alone, even dry, allays the tremours, ſpaſms, and toſſing, and induces ſleep, as I have more than once obſerved. Sometimes, alſo, cold water thrown upon the naked breaſt has been obſerved to afford relief †. In the orthopnœa, or violent cough, which are occaſionally excited, blood is diſcharged from the lungs, and ſometimes a vein cannot be opened to allay it, nor when opened does it always prove ſufficient. For ſtopping or preventing, therefore,

ſuch a diſcharge, reſt, abſtinence, and demulcent drink, ought to be enjoined. Likewiſe the concrete juice of ground-ivy, employed along with catechu earth, has more than once proved ſerviceable.

* Albertini, l. c. Morgagni, epiſt. xvii. n. 27.; and Senac, *Trait. du coeur. &c.* vol. iv. † Albertini, l. c.

312. But the chief part of the cure and prophylaxis is contained in the regulation of the patient's diet. In place of wine, which ought to be forbidden, unleſs the ſtomach, the ſtate of the patient's ſtrength, and other circumſtances require it, the drink ought to conſiſt of ſimple water, or of that which is prepared with ſteel, or in which maſtich, or quince-tree, or barley, have been boiled; adding, if it appear neceſſary, boiled grapes. The food ought to be ſparing, very light, and only ſufficient for ſupporting the ſtrength. Pottage of ground barley or rice, taken with milk or thin ſoup, twice or thrice a-day, without any other food, has ſometimes proved advantageous. Valſalva and Albertini inform us, that after one or two bleedings, employing a milk-diet for thirty or forty days, while the patient lay conſtantly in bed, has ſeveral times been obſerved to be attended with the greateſt utility. Sleep and reſt may be procured in the evening by means of emulſions of diacodium, or even by means of laudanum, when it is neceſſary to act more decidedly, as in the caſe of pains and ſpaſms. In the

distressing pains occasioned by distension of the subclavian artery, remedies containing opium may be employed to allay the spasms. The laudanum which goes under the name of Van Helmont's *laudanum liquidum*, is the best form; and it is given in the evening to the extent of twelve or fifteen drops, in water distilled from the juice of lettuce*. Lastly, all the remote causes must be avoided.

* Michellott, in *Opusc.* vol. i. *Com. instit. scient. et art. Bonon.*

PART II.

OF THE DISEASES OF THE LOWER BELLY.

CHAPTER I.

OF DYSPHAGIA.

1. FROM the diſeaſes of the cheſt we proceed, in order, to thoſe ſeated in the *abdomen*. The firſt which preſents itſelf is *dyſphagia*, namely, the *difficult*, or *impeded deſcent of the meat, or drink, through the æſophagus into the ſtomach*. It is of no conſequence whether a pain be experienced in it, or not; or whether the diſeaſe be rapid and acute, or ſlow and lingering *. Neither do I here wiſh to comprehend under it thoſe impediments, which are more properly ſituate in the fauces, as being already explained in the chapter upon *angina*. Nor let it be ſuppoſed, becauſe the œſophagus begins at the throat, and paſſes through the cavity of the cheſt, that I here treat of morbid deglutition improperly: for, if not in its ſeat, at leaſt in its nature and connection, the œſophagus belongs to the ſtomach,—which lies in the abdomen,—as a continued appendix of it.

* According to Sauvages, *dyſphagia* is difficulty of ſwallowing accompanied with pain. But it appears to me that a ſenſe of pain may

be abſent from it without the complaint itſelf ceaſing. Nor by this definition is it ſufficiently diſtinguiſhed from *cynanche*, namely, inflammation of the pharynx, in which difficulty of ſwallowing is conjoined with pain. Nor do I agree with Matthew Van Geuns, who (in vol. xi. P. i. ii. of the *Haarlem Tranſactions*) gives it as his opinion, that *dyſphagia* comes on and proceeds ſlowly, while *angina* attacks the patient ſuddenly. For ſometimes dyſphagia may both happen to ariſe ſuddenly, and proceed quickly, as will appear ſhortly; and, as has already been ſhewn, angina may come on ſlowly, and continue long. Vol. IV. Chap. XVII. par. 408. 419. 439. 443.

2. The ingeſta deſcend into the ſtomach with difficulty, or not at all, if the paſſage be not open, or the powers promoting their deſcent be deficient. The paſſage is obſtructed, if it be compreſſed externally by tumours of any kind in the neighbourhood of the œſophagus or throat; by the thymus gland; by the thyroid gland; by induration and ſwelling of the lungs; and by obſtruction and enlargement of the glands of the back, or bronchial glands; by aneuriſms, eſpecially of the aorta *; by varices; by ſurrounding fat; by a ſpaſm of the diaphragm; by inflammation of it and the parts in the neighbourhood of the œſophagus †; and, laſtly, by immoderate bulk of the liver, and its ſtretching to the œſophagus, in ſuch a manner as to force it againſt the vertebræ of the back. The paſſage, again, is obſtructed, owing to a morbid ſtate of the œſophagus itſelf, if the latter be ſtraitened in conſequence of ſpaſm, or inflammation, callus, or ſcirrhus of its coats, or ſwellings of the mucous fol-

licles, or obſtruction of the glands ſurrounding the cardia; or by ſwellings, ſcirrhus, callus, or polypus, or fungus, cancer, and ſimilar morbid ſtates of the upper orifice of the ſtomach; or if it be cloſed up by extraneous bodies being forced into it, being fixed and ſticking there ‡; or if the ſides of it have grown together.

* Morgagni, out of Valſalva, quotes an inſtance of an aneuriſmatic ſwelling which had ariſen in the left ſide of the throat, in conſequence of the aorta in the upper part being expanded into a ſac, by which not only the aſpera arteria and larynx, but likewiſe the œſophagus and pharynx, were compreſſed, and the reſpiration, ſpeech, and paſſage of the food, interrupted. *Epiſt. anat. med.* xvii. n. 19. 20.

He adduces another ſimilar inſtance, in numb. 25. of interruption of the reſpiration and paſſage of the œſophagus, in conſequence of the preſſure of a large ſacciform aneuriſm of the arch of the aorta. The aneuriſmatic ſac was ſituate under the right clavicle, at the ſternum, and for two or three months had ſo increaſed, that it appeared like another head riſing out of the middle of the ſternum. A third inſtance of the ſame kind may be found in Morgagni, *Epiſt. anat. med.* xviii. n. 22.

† Schacht affirms, that few inſtances of *inflammation of the œſophagus* are recorded. *Inſt. med. pract.* l. vii. c. xii. p. 249. Three ſuch, however, as appeared on diſſection, will be found in Morgagni, *Epiſt. anat. med.* viii. n. 25. xxxvii. n. 30. lix. n. 15.

‡ I have obſerved, in the caſe of a girl labouring under a *gaſtric fever*, depending on worms, a *dyſphagia*, which aroſe from a collection of *lumbrici* in the œſophagus, and nearly occaſioned ſuffocation. The fact appeared on diſſection.

3. The powers which ought to promote the deſcent of the ingeſta may be defective in ſeveral ways, but chiefly if the mucus, with which the

inner ſurface of the œſophagus is lubricated, be not ſecreted or ſupplied by its follicles; if the fibres of its mouth be ſtraitened *, or its coats become rigid, cartilaginous, or bony; if the muſcular fibres be eaten through by an ulcer, or labour under the greateſt atony, or paralyſis, whether it happens in conſequence of a morbid condition of itſelf, or through the nerves; laſtly, if ſome part of the œſophagus be expanded into a ſac, of which Graſhvis adduces an inſtance †, or if the œſophagus itſelf be pulled down, by the ſtomach deſcending from its ſeat; or be in any other way elongated, or burſt, a caſe of which was obſerved by Boerhaave‡; or be perforated by means of an ulcer, as Heiſter ‖ obſerved in a phthiſical patient.

* As it appears to be in point, we ſhall ſubjoin an inſtance of a ſingular dyſphagia, extracted from the *Italian Journal*, hoping that it may prove acceptable to the reader.

" In the month of December of the year 1782, an individual of the Dominican family, ſixty years of age, died, after having been reduced to the laſt degree of emaciation by a *dyſphagia*, under which he had long laboured, and the bad effects of which he had begun to experience at a very early period of his youth, when he could not ſwallow, unleſs very ſlowly, and but by compreſſing his throat with his hand; and, towards the cloſe of his life, whatever food he took, although intirely liquid, or nearly ſo, did not ſeem to reach to the bottom of his ſtomach, but he was obliged occaſionally to reject it gradually. Upon diſſecting the body, the only organic injury diſcovered was, a ſlight conſtriction at the top of the mouth of the œſophagus. Behind it, namely, where the pharynx terminates, a funnel-like cavity was found, into which the aliment

paſſed. Where it extended wideſt was its opening; it deſcended beneath, with a ſhut ſac, behind the œſophagus, between it and the vertebræ of the neck, ſix or ſeven inches in length. Whenever the food had reached to the beginning of the œſophagus, where the conſtriction was, turning from the right paſſage, it entered the cavity juſt mentioned, where it remained until it was forced out by means of a ſpaſm excited in it. This ſac was a kind of hernia of the inferior and poſterior extremity of the pharynx. The other parts were ſound. Gianella, an experienced practitioner of Milan, who was preſent at the diſſection, communicated the particulars to me. I do not recollect that any perſon has deſcribed a dyſphagia ariſing from a ſimilar cauſe." [*Germ. Editor.*]

† *Act. N. C.* vol. vi. obſ. 73. ‡ *Atrocis nec deſcripti prius morbi hiſtoria.* || Schacht, *Inſt. med. pract.* lib. vi. c. xii. § 26.

4. The remote cauſes which give riſe to theſe affections (2. 3.), of which innumerable inſtances are to be found in the works of anatomical writers, are, a too ſoft and delicate, or too dry and lean a habit of body; a ſtrumous, venereal, or ſcorbutic virus; tranſlations; acrid, poiſonous, and coagulating ingeſta; cold drink, or that which is too warm, as warm tea or coffee; ardent, aromatic ſpirits; adulterated wines, or thoſe ſweetened with ſugar of lead; the habitual drinking of particular kinds of water; the eating of ſaline things, of the thorn-apple, and probably of certain ſpecies of muſhroom; the bite of rabid animals; diſeaſes of the head, cheſt, and nerves; errors in diet; and violent vomiting when the ſtomach is full.

* See Bonet, *Sepulchr. anat.* lib. iii. ſect. iv. p. 745. to 755.

THE DIAGNOSIS.

5. ACCORDING as the patients, cauſes, parts affected, and other circumſtances vary, the phenomena of the diſeaſe alſo differ. Every particular muſt therefore be duly weighed, if we wiſh to attain a knowledge of the diagnoſis, and the particular cauſe which gives riſe to the complaint. It almoſt invariably happens, that in this complaint the aliment, immediately on entering the œſophagus, is either repelled by it, or, deſcending lower, ſticks faſt in it, or proceeds ſlowly through the narrow paſſage, with anxiety, and ſometimes with pain. Beſides, as the diſeaſe advances, an unuſually copious diſcharge of ſaliva generally takes place, while the food is paſſing with difficulty, which many conſider as being a pathognomonic ſymptom of the complaint. But in this, as in moſt other diſeaſes, all the preceding and concomitant circumſtances muſt be examined with due care, before we can draw any certain concluſion.

6. Such are the ſymptoms which generally accompany the complaint. But ſymptoms peculiar to each particular cauſe are for the moſt part preſent, and will not eſcape the notice of an attentive obſerver. For it may be concluded, that the dyſphagia is occaſioned by a great tumour in the neighbourhood of the œſophagus, if the patient not only ſwallow with difficulty, but likewiſe feel a particular pain in the cheſt and parts

near the œſophagus, with a ſenſe of weight and preſſure, eſpecially about the region of the mediaſtinum and diaphragm, and likewiſe with difficult and ſhort reſpiration, ſometimes alſo with the dread of ſuffocation; and particularly if a probang, on being introduced, detect an obſtacle in ſome meaſure externally ſituate, appearing to compreſs the œſophagus *. Preceding diſeaſes of the larynx, aſpera arteria, or lungs, and the functions of theſe parts being injured, as a change of the voice; conſtant difficulty of breathing, gradually increaſing; a cough; a hiſſing ſound; ſnoring, and the like;—will ſhew that the complaint depends upon induration or enlargement of ſome part of the larynx, aſpera arteria, or lungs. There is likewiſe preſent a particular weight at the cheſt, and, when a probang is gently introduced into the œſophagus, it meets with an obſtacle, but ſuch as appears to yield to it.

* A. P. Nahvys, *De morb. œſoph. in Act. acad. Haarlem*, vol. xi, p. 179. et ſeqq.

7. When there is reaſon to ſuſpect that the complaint ariſes from obſtruction of the glands of the back ſituate near the œſophagus, the reſpiration is then almoſt free, and no ſymptoms (6.) of the voice or breathing being affected are preſent. Nor is the deglutition performed with pain. But, upon inſerting a probang, if an obſtacle be any where diſcovered, it occurs about

the fifth vertebra of the back; and generally ſome of the glands elſewhere are obſtructed and ſwelled; and the body ſeems to abound with *pituitous* humours, or to be contaminated with a ſcorbutic, venereal, or ſtrumous taint. But if the deglutition be attended with pain, or a ſenſe of burning, and ſymptoms indicating ſuppuration or ulceration have preceded, or accompany it, (which may be eaſily diſcovered by the marks laid down elſewhere), it may be then conjectured that the dyſphagia ariſes from ulceration of the œſophagus.

8. But when a fleſhy excreſcence, or fungus, or polypus, occupies the canal of the œſophagus, nearly obſtructing the paſſage, it is very probable that the deſcent of the ingeſta, particularly if they be ſolid, becomes much more difficult; but that the body which is found, on introducing the probang, makes ſome reſiſtance, which is overcome without difficulty. On the other hand, a ſcirrhus there, when it is not ſmall, almoſt completely prevents the power of ſwallowing, and hinders the introduction of the probang, unleſs it be forced down with great violence. But if, when a reſiſting body is found, likewiſe a ſharp and pungent, or lacerating pain, or heat be felt, we may conjecture that the ſcirrhus occaſioning the dyſphagia, is paſſing into cancer, or already begun to be affected with ulceration.

9. The diagnoſis of the tumours incloſed in a follicle, or cyſt, is ſomewhat more difficult, as they

can ſcarcely be diſtinguiſhed from a ſcirrhus, fungus, or fleſhy excreſcence. If there be any difference, however, between them, it ſeems to conſiſt intirely in the greater or leſſer ſoftneſs or reſiſtance which the ingeſta or a probang meet. Rigidity of the fibres of the œſophagus, as Nahuys affirms *, produces nearly the ſame effects as ſcirrhus. But inſtances are recorded of the œſophagus having become cartilaginous, and notwithſtanding allowing the deſcent of the food into the ſtomach, without uneaſineſs being occaſioned †. Hence mere rigidity, unleſs conjoined with diminiſhed diameter of the œſophagus, will not occaſion dyſphagia. Moreover, in the caſe of mere rigidity, unaccompanied with narrowneſs of the paſſage, the probang can be more freely introduced.

* *Act. Academ.* Haarlem. vol. xi. p. 179. † Morgagni, *Epiſt. anat. med.* xxviii. n. 15. according to the obſervation of Gornia.

10. If the difficulty of ſwallowing proceed from exceſſive laxity, or paralyſis of the fibres of the œſophagus, the ingeſta neither occaſion pain, at leaſt deſerving notice; nor does every thing paſs with the ſame difficulty, for liquids are ſwallowed more difficultly than ſolids, contrary to what happens in the ſpecies occaſioned by obſtructions growing in the cavity of the œſophagus (8.). For both liquids and ſolids require ſome aſſiſtance, or irritation, or particular effort,

in order that they may paſs farther down. But when a complete relaxation of the fibres takes place, the ingeſta either ſtick in the throat, threatening ſuffocation, or regurgitate into the fauces and noſe. In this kind of dyſphagia, alſo, the probang is eaſily inſerted, and meets with no obſtacle. It is accompanied with, or preceded by, a lax, humid, languid habit of body; by torpor of all the motions or functions; by dulneſs of the mind; by comatoſe and paralytic affections; and by apoplexy.

11. Very different from this is the dyſphagia occaſioned by *ſpaſm*. In it not only is the œſophagus either intirely or partially perceived by the patient to be conſtricted or ſtraitened, but likewiſe the probang being introduced is ſtrongly graſped by the ſurrounding canal. It generally comes and goes, leaving intervals of reſpite. Frequently the ſpaſmodic conſtriction begins from the ſtomach itſelf; ſometimes the ſpaſm betrays itſelf at the fauces and neck, by a ſwelling, and ſenſe of ſuffocation, and, if it affects the œſophagus any where particularly, it occaſions the ſenſation of a ball ſticking in the part, which, however, is not fixed, ſometimes riſing, and ſometimes deſcending. Sometimes the whole length of the œſophagus appears to be ſo rigid as to convey the idea of a peg being fixed in it. The epigaſtrium then frequently becomes ſwelled and tenſe; the appetite generally fails, and occaſionally alſo oppreſſion and anxiety at the cheſt come

on; wind is diſcharged from the ſtomach, or attempted to be thrown off; ſhivering, ſtretching, and yawning intervene; nor are tremours, or other ſymptoms and cauſes of hyſteria, or hypochondriaſis, abſent; among which the principal are, emotions of mind, as grief, melancholy, ſuppreſſed anger, and the like. A pain is ſometimes felt under the ſternum, ſometimes it extends to the ſpine, and not unfrequently the voice itſelf is loſt. This complaint is ſometimes conſtantly preſent; ſometimes remits; at one time it recurs at ſtated hours, eſpecially in the evening, at another time it is prolonged for ſeveral days; ſometimes it is of ſhorter continuance, and quickly goes off, although it is extremely apt to return upon any ſlight occaſion. It is generally aggravated by cold drink, and alleviated by warm. This ſpecies, as Sauvages obſerves, accompanies opiſthotonos and other tetanic affections.

12. Laſtly, in order to diſtinguiſh dyſphagia ariſing from defect of mucus; from dryneſs of the inner ſurface of the œſophagus; from the growing together of its coats; from inflammation of them; from ſpaſm or inflammation of the diaphragm; from ſcirrhous hardneſs of the cardia; from an aneuriſm of the aorta; or from varices of the vena cava and other veins; from enlargement of the liver; from elongation, rupture, or expanſion of the œſophagus; from ſaturnine things; from poiſons; from the ſolanum; from

the thorn-apple; from too warm or cold drink; from worms, and other extraneous bodies getting into the œsophagus; and whatever other species there may be; we must pay the strictest attention to the remote causes, to the symptoms, to the effects which follow, to the part principally affected, and to the marks of other diseases from which they may arise; which will by no means be difficult, if the observations already delivered at length in their proper places be kept in remembrance. Likewise some of the causes are applied externally, and are so obvious to our senses, that they cannot escape the observation of a physician who inquires carefully of the patient and his friends, with respect to what had been previously done by him; what had been eaten or drunk; what kind of life he had led; and so forth. But in a difficult or doubtful case, nothing is attended with more advantage than consulting histories of similar diseases, and their appearance on dissection, of which we have at present a considerable number, and to compare them with our own cases *. For it is inconceivable how much light this throws both upon the diagnosis of the disease, and upon the cause from which it originates.

* Several passages to be found in writers, mentioning histories of dysphagia, depending on various and uncommon causes, may be consulted in Sauvages' *Nosology*, cl. vii. ord. 3. gen. 17.

THE PROGNOSIS.

13. WHEN the cauſes of the complaint are aſcertained, we immediately perceive what apprehenſions or hopes are to be entertained, and what aſſiſtance may be expected from the aid of medicine. For the degree of the danger will depend upon the magnitude of the cauſe. If, therefore, it appear to be ſuch as not to admit of being corrected or removed, as is the caſe with moſt of the organic injuries of which I have already ſpoken, the patients are in the greateſt degree of danger, and gradually fall off from want of food, at length ſinking under the complaint, completely deprived of ſtrength. If there ever be any hopes of recovery, they will depend on arriving at a knowledge of the cauſe, at the beginning of the complaint, before, from its progreſs, it becomes incurable.

THE CURE.

14. BUT of whatever kind the dyſphagia be, or whatever its termination, I ſhall not omit mentioning the cure which appears to be calculated to each of them, that, if it be not adequate to the removal of the complaint, it may at leaſt contribute as much as poſſible to its mitigation, and to the prolongation of life. Diminiſhed capacity of the œſophagus, therefore, in any meaſure ariſing from rigidity of the fibres, requires moiſtening, emollient, and lubricating remedies, as decoctions

of marſh-mallows, mallows, and lint-ſeed, fat, bland, and recent oils; mucilages of gum-arabic; and gum-tragacanth, or ſtarch, and things compoſed of theſe, to be given gradually and frequently. We muſt likewiſe occaſionally inſert into the œſophagus a probang, with an ivory head, or with one made of ſpunge, in order to cautiouſly and gently dilate the œſophagus.

15. If the cavity of the œſophagus be obſtructed in conſequence of ſwelling and obſtruction of the glands, or ſtraitened and compreſſed externally in conſequence of an incipient callus,—inciſive, reſolving, attenuant, and opening remedies are indicated, as neutral and alkaline ſalts, ſoap, ferulaceous gums, extract of hemlock, and mercury, occaſionally interpoſing gentle laxatives. But ſometimes ſuch is the difficulty of ſwallowing, that ſuch medicines either cannot be taken by the mouth at all, or not in the requiſite quantity. In that caſe, mercurial friction ought to be employed, eſpecially if a venereal taint be ſuſpected. In ſhort, whatever the cauſe which has given riſe to the obſtruction and ſwelling of the glands may be, when the complaint is recent, rubbing in mercurial ointment upon the neck, ſo as to occaſion ſome flow of ſaliva, is recommended by Munckley *; who points out the utility of this plan, by a good many inſtances, which he adduces.

* *Med. Tranſ. publiſhed by the College of Phyſicians*, vol i. p. 165.

16. A ſimilar method of cure is to be employed, if the complaint proceed from other tumours, ſcirrhus, or obſtructed or enlarged liver (2.). But if they have paſſed into cancers, or begun to do ſo, as there is ſcarce any room for extirpating them, we muſt guard againſt all thoſe things which act powerfully and ſharply, and, on the other hand, employ ſuch as allay acrimonies, mitigate the ſymptoms, and in any way reſiſt the cancerous corruption. Of theſe the chief are aſſes milk, and goats whey; the ſoup of frogs and river-crabs; camphor, peruvian bark, medicated waters, the bath, occaſional cathartics; and, when the pain is urgent, or inflammation apprehended, bleeding, and the cautious employment of opium. Ulcers, fleſhy excreſcences, and fungi, when they are diſcovered to be in the œſophagus, require gently detergent, repreſſing and drying remedies; and thoſe means alſo are to be employed, which are ſuppoſed to correct and purify various taints and acrimonies of the blood, eſpecially antiſcorbutic, antivenereal, and antiſcrophulous remedies, ſudorifics, and the like.

17. Our exertions will be crowned with more ſucceſs in treating the difficulty of ſwallowing, which ariſes from inflammation of the œſophagus, or neighbouring parts, or from worms; or from acrid and poiſonous ingeſta; or from hyſterical and hypochondriacal ſpaſms. For the remedies for diſcuſſing and reſolving inflammation, I conſider as being ſo well known, from the ob-

ſervations repeatedly delivered already, as not to require being mentioned here. With regard to worms, theſe muſt not only be deſtroyed by means of the more powerful anthelminthics, of which I will hereafter treat in a diſtinct chapter, but alſo muſt be expelled by the mouth or anus, by means of emetics, or cathartics. Acrid and poiſonous ingeſta ought to be ſheathed by means of fatty and oleaginous remedies, or blunted by means of watery drinks given abundantly; and, ſo ſoon as it can be done, they ought to be expelled by means of emetics and cathartics. The ſpaſms, when their origin is aſcertained, although they generally prove obſtinate, and occaſion more uneaſineſs than danger, are not difficultly allayed, except ſuch as originate in the brain or ſpinal marrow; for theſe laſt are more difficultly removed, as appears from tetanus, opiſthotonus, and other ſpaſmodic affections, particularly of the idiopathic kind. But if they be occaſioned by a colluvies in the ſtomach; by depraved digeſtion; by the catamenia, or other uſual evacuations, as that of the hemorrhoidal diſcharge; the remedies to be employed are, cathartics, bitters, and tonics, of which I will immediately ſpeak, or bleeding, aperients, and remedies for recalling uſual evacuations. But if exceſſive ſenſibility, or irritability, or emotions of mind, be the cauſe, they are beſt removed by emollient, oleaginous, and anodyne remedies, eſpecially opium, tranquillity of mind, and oppoſite affections.

18. Tode mentions a ſpaſmodic dyſphagia which had been induced, as he was perſuaded, by the immoderate uſe of ſaline medicines. It had received no relief either from caſtor, or the eſſence of gentian, or peppermint-water, or the *liquor anodynus mineralis* of Hoffman, or his *elixir viſcerale*; which is not to be wondered at, as all of thoſe were rather calculated to increaſe the tenſion and irritability of the fibres. He removed it, however, in the ſpace of three days, by means of a watery infuſion of quaſſy-wood, prepared like tea, and drunk frequently in the courſe of the day *. It ſeems probable, however, that the benefit was derived rather from the quantity of watery and tepid drink, by which the irritating power of the ſalts was blunted, and the tone of the fibres relaxed, than by any peculiar virtue of the quaſſy-wood.

* *Collect. ſoc. med. Haimien.* vol. i. p. 205.

19. The dyſphagia which ariſes from atony or paralyſis requires remedies the very oppoſite of theſe. Relaxation, and diminiſhed irritability of the fibres, when the power of ſwallowing is injured by that cauſe,—for it ſeldom happens that it intirely deſtroys the deglutition,—are corrected by all thoſe things which draw off the ſerous and pituitous fluids, which by any acrid ſtimulus excite the muſcular power, and which ſtrengthen the fibres. By the long-continued employment of theſe remedies, the complaint, after continuing for a length of time, being apt to return, is re-

moved. It is attended with ſomewhat greater difficulty when the nervous influence is languid, as in paralyſis of the œſophagus. The more obſcure its origin is, and the ſlower and more tedious its progreſs, always growing worſe, the leſs are the hopes of the patient's recovery. But when it ſuddenly attacks a patient, in conſequence of a fit of apoplexy, the event may be gueſſed at by the greater or leſſer degree of the primary complaint, of which it is a ſymptom. The remedies calculated to the removal of the complaint, I think clearly pointed out in Chapter IV. *On Apoplexy*, par. 142. et ſeqq. where I have treated of paralyſis, enumerating the diſeaſes of the head.

20. Extraneous bodies falling into the œſophagus, as pieces of money, nails, ſtones, bones, and the kernels of ſome fruits, and the like, or large pieces of ſolid food, not ſufficiently chewed, ſticking in it, deſerve particular attention, as requiring immediate relief. In general, the deſcent of them is promoted by drinking water or oil, and, if that be not ſufficient, they are gradually puſhed down, by gently introducing a probang, or ſimilar inſtrument. For, when they get down to the ſtomach, they afterwards eaſily open a paſſage for themſelves by the inteſtines, ſo as to be diſcharged downwards in two or three days. They are ſeldom retained longer, although they have ſometimes been obſerved not to paſs out for ten days, or more; which may vary not a little,

according to the ſize and figure of the body ſwallowed, or the matter of which it is compoſed. I do not deny, however, that ſometimes ſuch bodies ſtop either at the pylorus, or in the other convolutions of the inteſtines, or at the valve of the colon, and remain long there, occaſioning the moſt diſtreſſing complaint, as experience has too often ſhewn. Nothing promotes their paſſage from the inteſtines more than oleaginous, fatty, and mucilaginous ſubſtances, taken occaſionally in large quantity. In this manner I have frequently obſerved, in infants and children, bodies of ſuch a ſize and figure, as were ſuppoſed to be totally incapable of paſſing through the canal, generally by degrees make their way out.

21. Sometimes, however, it happens, that they cannot be removed from their ſituation in the œſophagus, either becauſe they are fixed there, or becauſe an inſtrument for puſhing them down cannot be introduced. In that caſe the fingers, or a feather dipped in oil, ought to be inſerted, to excite vomiting. If theſe means do not anſwer, a piece of bread, or ſome kind of fruit, ought to be ſwallowed, and forced down with a great effort, that, if poſſible, it may puſh down with it the adhering body. But if this alſo cannot be done, or be attempted unſucceſsfully, a ball made of ſpunge, and tied well to a ſtrong ſilk thread, muſt be ſwallowed, and again drawn up, in conſequence of which, thorns, needles, and ſmall bones; are either thruſt down, or again

pulled up. Laſtly, if theſe means alſo fail, ſome adviſe adminiſtering an emetic in water, that they may be rejected in conſequence of exciting vomiting. For it is ſufficient to pour a few drops of an emetic fluid into the ſtomach, to excite vomiting. The propriety of this plan has been frequently confirmed by the ſucceſs attending it. A piece of beef, which had ſtuck in the middle of the œſophagus of a ſoldier, by no contrivance could be moved, either upwards or downwards. Schmucker adopted the ſingular meaſure of pouring liquid tartar-emetic into the vein of the arm*. About half an hour afterwards it occaſioned violent reaching, in conſequence of which the lump was eaſily rejected. I know not, however, whether this plan be always ſafe or practicable. The fleſh, without doubt, in a ſhort time would either have become corrupted, or have become otherwiſe digeſted, ſo as, in conſequence of its bulk being diminiſhed, to ſhift its ſituation, and paſs down into the ſtomach, without danger. But could the ſame ſucceſsful iſſue be promiſed in the caſe of harder bodies? Will it be ſaid that vomiting would be equally harmleſs when ſharp cutting bodies have been ſwallowed, as pins, nails, knives, or pieces of glaſs? It may rather be apprehended, that, in conſequence of the efforts occaſioned, they would be fixed deeper, ſo as to render their extraction impracticable. In ſuch caſes, therefore, if in any, the moſt prudent meaſures ought to be adopted, that the

practitioner may avoid the imputation of temerity. I muſt not omit to mention, that ſometimes ſuch bodies remain not far from the pharynx, fixed faſt in the œſophagus, and are incapable of being extracted by any means. In this caſe Guattani, eminently diſtinguiſhed for his ſkill in ſurgery, has propoſed opening the œſophagus, at the ſide of the aſpera arteria, for their extraction †.

* *Miſcel. chir.* vol. i. p. 335. Likewiſe in *Com. Lipſ.* vol. xxiv. p. 325. † *De aneuryſm. ad calcem.* See alſo vol. iii. *Harum. inſtit.* § ccclxxxvi. ccccxxxvi. in the notes.

22. It remains for me to ſay ſomething concerning the regimen of thoſe in whom the complaint has increaſed to ſuch a degree, that even the thinneſt aliment can ſcarcely be at all ſwallowed, and paſs down to the ſtomach, on account of the extreme narrowneſs of the paſſage. In ſuch perſons it is neceſſary to gently dilate the œſophagus by means of a probang of wax, or, which is preferable, by a hollow flexible tube compoſed of wax, and through it, by means of a funnel, to introduce nouriſhing fluids to the ſtomach. An inſtrument of this kind, for the introduction of aliment into the ſtomach, may be ſeen in the works of Mauchart, who contrived it, and cauſed it to be made with this view. But if, as very frequently happens, even it cannot be admitted, injections of animal ſoup, or of milk and the yolks of eggs, and ſimilar food, ought to be frequently thrown in, that at leaſt in this way the life may be prolonged as much as poſſible. Nor will it

be without advantage, occaſionally to plunge the whole body into a tepid bath of whey, or milk and water, or weak animal ſoup, with a little Canary wine, and to permit it to continue ſome time there, that the abſorbents may attract the finer parts of the fluid, with which the body may be in ſome meaſure nouriſhed. But it is a hard and wretched reſource, to attempt prolonging the patient's exiſtence in this manner; as in general our endeavours prove fruitleſs.

CHAPTER II.

CONCERNING MORBID APPETITE, AND LOATHING OF FOOD.

23. THE appetite is ſometimes ſo morbidly increaſed, that not only all kinds of food are taken indiſcriminately, without occaſioning ſatiety, —as happens in λυκορεξία, or the ορεξις κυνωδης, namely, the *fames canina*, and in *bulimus*, or the *fames bovina*:—but ſometimes alſo a longing deſire is conceived for certain ſubſtances, both foreign to the nature of food, as well as ſuch as are employed in the way of aliment, as in the *pica*, *ciſſa*, *citta*, and *malacia*.

24. *Cynorexia* is defined to be, an inſatiable deſire for food, ſhortly ſucceeded by vomiting of the ingeſta, or the ſpeedy diſcharge of them by

ſtool. Thus, the ſtomach being freed from its exceſſive load, a freſh deſire for eating returns, and the ingeſta are again vomited, in the ſame manner as happens in dogs with a voracious appetite. But when the aliment is quickly paſſed by ſtool, ſometimes half digeſted, ſuch an affection by ſome is named, not *fames canina*, but *fames lupina*, or λυκορεξια.

25. *Cynorexia* and *bulimia* differ in this, that in the latter the immoderate appetite, if it be not ſhortly ſatisfied, is ſucceeded by fainting. The *pica*, *ciſſa*, or *citta*, again, is ſaid to be that depravation of the appetite, in which an abſurd longing is conceived for ſubſtances foreign to the nature of food, as lime, ſtucco, chalk, mill-ſtones, charcoal, cinders, glaſs, and ordure *; while the *malacia* is that morbid condition of the ſtomach, in which particular kinds of food, or condiments, are taken, but in too great quantity, and too voraciouſly, ſuch as herrings, pepper, ginger, ſalt, and the like †.

* Sennert relates, that there was a woman who uſed to eat chalk and pulveriſed mill-ſtones, to the extent of two pounds daily, with impunity.

† In Galen the hiſtory of a pregnant woman is related, who uſed to devour ſome pounds of ginger at a time, with the greateſt avidity, and without any ſenſe of heat being excited in her fauces or ſtomach.

26. But in the ſame manner as the appetite is frequently morbidly increaſed, or vitiated, ſo is

it ſometimes impaired, or altogether loſt. Impaired appetite is named *dyſorexia*; total loſs of it *anorexia*, or *apoſitia*; although by the laſt term ſome underſtand that loathing of meat in which the mere preſence of food excites diſguſt and nauſea. But theſe diſtinctions are not always nicely attended to by phyſicians, as they generally comprehend both *diminution* and *loſs* of appetite under the ſingle name of *anorexia*.

27. The proximate cauſe of *cynorexia* and *bulimia* appears to me to be, a certain troubleſome ſenſation, in conſequence of which the perſon affected feels a conſtant and eager craving for food. It is excited and kept up either by too great acrimony and activity of the gaſtric fluid; or by the remains of the food on the ſtomach having become acrid; or by the inſertion of the ductus choledochus into the ſtomach and pylorus, as has been ſometimes obſerved in ravenous animals *; by lumbrici, tæniæ, and other ſpecies of worms; by too violent friction of the ſides and rugæ of the ſtomach upon one another; or by a convulſive and ſpaſmodic affection of it, not unuſual in hyſterical women; or by increaſed ſenſibility or irritability of the ſtomach, from whatever cauſe, one or other of which may ariſe from any ſlight and natural cauſe occaſioning a ſtronger ſenſe of hunger, and inverting, or ſo increaſing and accelerating the periſtaltic motion, that, in conſequence of it, fainting and vomiting ſucceeding the quantity of ingeſta, or the too rapid deſcent of them, may be readily

underſtood to take place. This too quick deſcent of the food from the ſtomach is eſteemed of ſuch conſequence by ſome writers, that in it alone, and therefore in the very quick emptineſs of the ſtomach ſucceeding it, they ſuppoſe the cauſe of theſe complaints to conſiſt. Nay, they contend, that the aliment deſcends from the ſtomach too quickly, on account of the pylorus itſelf being ſo much relaxed and open †, as not to be able to retard its deſcent as it ought, while, at the ſame time, the expelling powers of the ſtomach are acting with their uſual force. They ſupport their opinion by an obſervation of Ruyſch ‡, who, in the body of a woman who had died in conſequence of a long-continued *lycorexia*, found no other morbid condition, except an unuſual dilatation of the pylorus, admitting all the fingers of one hand. During her life, immediately on taking food, when it had been ſcarce received into the ſtomach, it paſſed down to the inteſtines, and ſhe was ſhortly after ſeized with gripes; until, being thus deprived of nouriſhment, and exhauſted to the laſt degree, ſhe was at length carried off.

* Bohn. *Circul. anat. phyſiol. progymnas.* x. p. 153. Ettmuller, *Oper.* vol. ii. p. 54. In a very voracious animal, namely, the oſtrich, the biliary duct is inſerted into the pylorus, according to Duverney; *Mem. de l'acad. des ſcienc.* an. 1692. p. 30. This happens alſo in the porcupine.

† Pallucci aſſents to this opinion, in a work of his lately pu-

bliſhed, entitled, *Arte nuova, e facile di curare i mali, &c.* where, in p. 48. he remarks, that the diſeaſe, when ariſing from this cauſe, is cured merely by abſtinence.

‡ *Obſerv. anat. chir.* obſ. 47. p. 94. This obſervation is likewiſe related by Lieutaud, in his *Hiſt. anat. med.* vol. i. lib. i. art. 27. There alſo an obſervation of Platner is quoted, concerning a relaxed and dilated pylorus, in a man who had never laboured under the fames canina, or bulimia.

28. But both morbid conditions of the appetite, namely, *pica* and *malacia* (25.), ſeem to be derived from no other ſource, more probably, than from the condition of the gaſtric fluid being changed, in ſuch a way as, by rouſing the ſenſibility and action of the ſtomach, not only firſt to increaſe the appetite, but alſo, through the nerves, gradually to affect the ſenſorium commune, and afterwards the nerves proceeding from thence to the tongue and noſtrils, in ſuch a manner that the idea, both of deſire for this or that, and of the pleaſure to be derived from it, is excited in the mind. But a mental halucination, as ſome ſuppoſe, is not ſufficient; ſince a particular change and action of the digeſtive fluids is neceſſarily required, that ſubſtances ſo abſurd and different from the nature of food can be borne on the ſtomach, and digeſted with impunity. No wonder, then, that moſt phyſicians are of opinion, that an *aciditas eſurina* exiſts in the fluids of the ſtomach; nor do I ſuppoſe that they are far from the truth, as patients labouring under ſuch affections frequently throw up an eructation of acid fluid, and take in earthy

and alkaline ſubſtances with pleaſure, by means of which the acidity being as it were blunted, they are generally cured. Moreover, moſt of the remote cauſes are of that kind which are calculated for generating or ſupporting a ſpontaneous acid; ſuch are, the abuſe of crude ſubſtances, and unripe fruits; hypochondriacal and melancholic affections; a delicate conſtitution; pregnancy; ſuppreſſion of the menſes; chloroſis; cachexy; bad-conditioned fluids; childhood; grief; and an inactive life.

29. Moreover, the deſire for food is impaired, or altogether loſt (26.), by the defect of that ſenſation in which the natural appetite conſiſts, and oppoſite cauſes (27.); namely, by a ſluggiſh and viſcid colluvies of the ſtomach; by ſcantineſs or ſluggiſhneſs of the gaſtric fluid; by the mixture of a putrid, purulent, or alkaleſcent principle; by diminution, vitiation, or too great abundance of the bilious fluid; by the natural ſenſibility or irritability being impaired; by quickened motion of the blood, or its being accumulated about the ſtomach, as in ſome fevers; by tumours; by a ſcirrhus; cancer; ulcers; and other morbid ſtates of the ſtomach and neighbouring parts; which, if they even affect the common origin of the nerves in ſuch a manner, as to excite in it the idea of averſion or loathing; or if they injure and oppreſs the ſtomach, ſo that it cannot retain the ingeſta without uneaſineſs, pain, nauſea, or

vomiting, it appears clearly why *apoſitia*, or the greateſt loathing of food, ſhould be occaſioned. The remote cauſes preceding theſe affections, are, emotions of mind, eſpecially terror and grief; immoderate venery; conſtant exertions of intellect; exceſſive evacuation; ſuckling too long; pregnancy; accumulated fœces; the motion of a ſhip; the copious or frequent drinking of warm or tepid water; the exceſſive or frequent uſe of fatty, oily, putrid alkaleſcent, and narcotic things, of wine, and ardent ſpirits; a ſedentary life; ſuppreſſed or increaſed evacuations; plethora; the heat of ſummer; the ſtagnant air in fenny ſituations; obſtructions of the viſcera of the lower belly; ſtagnant black bile; melancholy; fevers; and the like.

THE DIAGNOSIS AND PROGNOSIS.

30. THE diagnoſis of each of theſe affections (33. to 36.), is quite evident from what has already been ſaid; nor is the diſcovery of their cauſes difficult, if the deſcription of each diſeaſe be kept properly in view. Let us rather proceed, therefore, to the prognoſis of them. Morbid appetite of itſelf is free of danger, unleſs it be conjoined with other diſeaſes, of which it portends either the danger, as in hectic fever, and in phthiſis pulmonalis; or the duration, as in intermitting and ſlow fevers, and in dropſy; or the relapſe, as in a ſtate of convaleſcence. But cynorexia not unfrequently leaves behind it a coma-

toſe ſtate, or lientery, or atrophia; it has likewiſe been ſometimes obſerved to terminate in bulimia, and at length in a fatal ſyncope. For the bulimia is more dangerous on account of the frequent fainting-fits which accompany and ſucceed it.

31. The *pica* and *malacia*, if they prove obſtinate, eſpecially in children and girls, may be expected to give riſe to worſe conſequences, as cachexy, obſtructions of the abdominal viſcera, ſwelling of the belly, congeſtions of the meſentery, a bad ſtate of the fluids, emaciation, atrophia, and dropſy. But it is almoſt unanimouſly agreed upon among phyſicians, that pregnant women run leſs riſk. The following aphoriſms of Hippocrates regard loathing of food, or anorexia: "To remain collected in one's mind, and to take without diſguſt whatever is offered, is a good ſign; otherwiſe it is bad *.—In a complaint of long ſtanding, loathing of food, and thin ſtools are bad †.—It is likewiſe bad in dyſentery, and worſe conjoined with fever ‡;" and, on the whole, the *apoſitia* is moſt to be apprehended. It frequently indicates the moſt ſevere cauſe, ſcarce admitting of being removed. At the turn of diſeaſes, weakneſs or loſs of appetite denotes an imperfect criſis, and gives reaſon to apprehend a relapſe of the complaint.

* *Aphoriſ.* xxxiii. ſect. 2. † *Aphoriſ.* vi. ſect. 7.
‡ *Aphoriſ.* iii. ſect. 6.

THE CURE.

32. THE cure of cynorexia and bulimia ought to be directed to removing the uneaſy ſenſation of hunger, which I have mentioned (27.). This will be effected by removing each of the cauſes. When, therefore, theſe conſiſt in exceſſive acrimony of the gaſtric fluid, diluent, watery, oily, fatty, and mucous remedies, cows-milk, articles prepared with milk, earthy, alkaline, and ſimilar things, are indicated, and ought to be taken largely, and for a length of time. With theſe it is advantageous occaſionally to interpoſe gentle evacuants, and thus to remove the fomes of the diſeaſe. Of the laxatives, white magneſia, employed liberally and repeatedly, is to be preferred. If the complaint do not yield to theſe, emetics may alſo be tried, when nothing contrary indicates them, with the view of ſhaking the whole gaſtric ſyſtem, and expeditiouſly drawing off the noxious fluid. Ipecacuanha claims the firſt place. Increaſed ſenſibility and irritability of the ſtomach, and an increaſe of the periſtaltic motion, as it may be ſometimes reckoned among the cauſes of bulimia, ought to be allayed by opiates, by means of which alſo the vomiting, and too rapid paſſing of the aliment, are checked. They muſt be employed chiefly when a hyſterical or hypochondriacal mobility of the nerves ſeems to keep up the diſeaſe. The ſenſation of hunger, alſo, is blunted by the uſe of generous and ſweet

wine, according to Hippocrates, who obſerves (Aph. xxii. ſect. 2.), "The drinking of wine removes hunger." This will be attended with more advantage, however, in bulimia itſelf, becauſe, on account of its cordial power, it will prevent lipothymia and fainting. If the preſence of worms be ſuſpected, anthelminthics muſt be employed, of which I have elſewhere ſpoken at ſufficient length *. In this caſe the mineral acids chiefly are proper, and particularly ſulphuric acid, with which Poter is ſaid to have cured a fames canina. Probably the complaint depended upon worms, or exceſſive irritability of the ſtomach, which might have been allayed by the ſulphuric acid, without our ſuppoſing an alkaline volatile acrimony to be preſent, requiring to be corrected by an acid. Laſtly, relaxation or dilatation of the pylorus, on account of which the too rapid deſcent of the food from the ſtomach, occaſioning cynorexia or lycorexia, will be removed chiefly by abſtinence, and by the judicious dividing of the patient's meals, in ſuch a way that the empty ſtomach may give time to the pylorus for contracting itſelf. Nor ought we in this caſe to omit tonics and gentle aſtringents, combined with paregorics.

* Vol. II. *Of Fevers*, par. 449.; and they will be farther diſcuſſed in Chap. X. of the preſent volume, *Concerning Worms*.

33. With reſpect to the cure of vitiated appetite, or pica and malacia (23. to 25.), in it not only muſt we reſtore to the gaſtric fluid its natu-

ral condition, but likewiſe the fault in the patient's imagination muſt be removed, and the ſtomach ſtrengthened. Frequently the cauſe or fomes of the complaint is removed by gentle vomiting or purging. If too great accidity be preſent, it is corrected by earthy, alkaline, and abſorbent remedies, namely, crabs-eyes, *terra nucerina*, *terra lemnia*, bezoar mineral, as it is called, magneſia of nitre, and corals given in the form of powder. Suppreſſed evacuations muſt be recalled by all means. We muſt proceed with more caution in the caſe of pregnant women. For in them nature frequently provides for itſelf, either by exciting a vomiting, or by its ariſing ſpontaneouſly, ſo that, after the third or fourth month of geſtation, the vitiation of the appetite intirely ceaſes. Upon the whole, the patients are to be gradually reſtored to a proper method of living, and to the employment of ſalutary diet, by means of pleaſant entertainments; by rich port wine; by agreeable converſation, and ſenſible advice; by tart, bitter ſubſtances; by tonics, eſpecially chalybeates, and the like.

34. Laſtly, the cure of *dyſorexia*, *anorexia*, and *apoſitia* (26. 29.), is to be obtained by thoſe remedies which are adapted to the variety of the cauſes. If ſluggiſh and viſcid humours oppreſs the ſtomach, blunting its ſenſibility and irritability,—which will appear from the habit of body, temperament, age, preceding manner of living, an inſipid taſte of the mouth, ſluggiſhneſs of the ſaliva, whiteneſs

of the tongue, and heavineſs and weight in the epigaſtrium,—they muſt firſt be diſſolved by means of neutral ſalts, gum-ammoniac, and Venice ſoap, and afterwards drawn off by means of cathartics. On this account the beſt remedies are, rhubarb, aloes, agaric, and various remedies compoſed of theſe. Nor is gentle vomiting to be rejected, when the patient is accuſtomed to it, or diſpoſed to vomit, or when the diſeaſe does not yield to the remedies already mentioned, and no ſymptom contra-indicating it occurs.

35. But if the gaſtric fluid appear to be ſluggiſh, and atony of the ſtomach be at the ſame time combined with it, which will be aſcertained by the conſideration of the remote cauſe, it will be proper to employ aperients, bitters, gentle aromatics, ſtimulants, and tonics. Among theſe the moſt conſpicuous are, wormwood, ſouthern-wood, leſſer centaury, germander, mint, avens, wild valerian, quaſſy-wood, caſcarilla and orange bark, peruvian bark, and, particularly, ſteel. Infuſions, decoctions, tinctures, extracts, and various kinds of elixirs, according to the variety of the ſubſtances, of the patient, and time of life, are prepared from them. The elixir of Paracelſus, which is in great eſtimation, is compoſed of aloes, myrrh, and ſaffron. But it muſt be uſed cautiouſly in warm and dry temperaments, and in hot countries or in the ſummer-ſeaſon, for it proves too heating and ſtimulating.

36. When a bitter taſte in the mouth; a yellow colour of the tongue, eyes, and ſkin; offenſive evacuations; and deep or yellow coloured urine; denote abundance, alkaleſcence, or corruption of the bile, we muſt correct and evacuate the bilious colluvies which has deſtroyed the appetite, by means of the ſubacid juices of vegetables, tamarinds, cream of tartar, or gentle emetics. Likewiſe the common ſalts, or ſal polychreſt, are found to be remarkably cleanſing and evacuant. If it appear that the loathing of food proceeds from abundance or quickened motion of the blood, or from congeſtion of it round the ſtomach, by the ſymptoms of plethora, or quickened motion of the pulſe, or the ſuppreſſion of cuſtomary evacuations, it becomes neceſſary then to open a vein, to recall the hemorrhoidal diſcharge, to promote the flow of the catamenia, and, by means of the ſaponaceous vegetable juices, to reſolve the blood ſtagnating in the abdominal viſcera, and reſtore its circulation. Under this head come the juices of ſuccory, dandelion, agrimony, graſs, or decoctions of theſe, with honey or oxymel, or whey boiled with ſome of theſe plants, or with the pulp of tamarinds mixed with ſome neutral ſalt, and given *per epicraſin*.

37. Laſtly, the ſpecies of anorexia, which depend upon the preſence of other diſeaſes, cannot be cured but by removing the primary diſeaſe, if that can be done. When the primary diſeaſe is incurable, every attempt to reſtore the appetite is fruit-

leſs. The patient, however, is not to be intirely given up, and we muſt endeavour to alleviate his ſufferings as much as poſſible, by adminiſtering tonics and antiſeptics, and the moſt nutritious ſubſtances, accommodated to the patient's habits. But, in every kind of depraved appetite, ſuch a regimen, in regard to diet, ought to be adopted, as is calculated for removing the cauſes. In general, exceſſive cares, and whatever diminiſhes the nervous energy, or vitiates the natural condition of the fluids, ought to be carefully avoided. The body ought to be ſtrengthened by means of walking, riding in a carriage, or on horſeback, running, hunting, and repeated friction. Likewiſe, the timely employment of the cold bath, and medicated and mineral waters, is conſidered as being of the greateſt utility, and contributes very much, both to prevent and remove the complaint; the food ought to be light, agreeable, and gently ſtimulant. Ripe fruits, and pot-herbs, are generally borne well, and excite leſs nauſea. Pure wine, which is not rich, nor ſweet, but thin, acidulous, or ſomewhat auſtere, as Rheniſh wine and Burgundy, but which has been long kept, or ſimilar wine appears preferable to others, and may therefore be allowed.

CHAPTER III.

OF MORBID DIGESTION.

38. FOUR kinds of morbid digeſtion are to be found in the works of practical writers, namely, *dyſpepſia*, *bradypepſia*, *apepſia*, and *diaphthora*. The *firſt* takes place when the digeſtion is imperfect, and difficultly performed; the *ſecond*, when it is performed more ſlowly than is proper; the *third*, when it completely fails, in ſuch a manner that the crude aliment remains upon the ſtomach, or is paſſed unconcocted; and, laſtly, the *fourth* occurs when the aliments rather undergo ſpontaneous corruption than digeſtion. It ſeldom happens, however, that theſe morbid ſtates appear ſeparately as they have been deſcribed; but they are very frequently found variouſly combined together. And when the diaphthora, or ſpontaneous degeneration of the aliments takes place, a double kind of crudity ariſes, namely, an alkaleſcent or putrid, and an acid one, by ſome named *ſoda*, or *ardor ventriculi*, or *pyroſis*. To theſe may be added, a rancid crudity, which is eaſily diſtinguiſhed by its taſte from the reſt.

39. As ſeveral cauſes neceſſarily concur to effect the natural digeſtion, which are explained in the phyſiology, ſo the want, diminution, or vitiation of all or ſome of theſe, deſtroy, retard, diminiſh, or vitiate it. Under this head, there-

fore, come moſt of theſe cauſes by which (27. 29.) I have already ſhewn the appetite to be injured, vitiated, or deſtroyed; and, moreover, bad articles of diet, too great a quantity of it, and its being ill dreſſed; ſcantineſs of the ſalivary and gaſtric fluid, or of that of the duodenum, namely, the bile and pancreatic fluid; ſluggiſhneſs, and a vitiated ſtate of them; ſwellings, ulcers, callus, and other affections with which the ſtomach is either immediately or remotely injured, irritated, compreſſed, or relaxed; and, laſtly, that which is conſidered as being the moſt frequent cauſe, namely, atony and paralyſis of the ſtomach; or, on the contrary, a ſpaſm, in conſequence of which its motion either becomes languid, or ceaſes, or is deranged, or checked. When the complaint is owing to atony and paralyſis, it is named by ſome alſo *imbecillity* and *reſolution* of the ſtomach.

THE DIAGNOSIS.

40. THE perſons principally liable to depraved digeſtion are, thoſe who lead a ſedentary life, and are devoted to ſtudy; thoſe who have long laboured under affections of the mind, as hypochondriacal and melancholic people; ſuch as are in a ſtate of debility, or exhauſted with wine and venery. They are diſtreſſed with a weight, inflation, languor, diſtenſion, and anxiety of the ſtomach; a ſenſe of fluctuation in it, rumbling, flatus, and frequent eructations, particularly diſtreſſing five or ſix hours after meals; fluſhing

of the face; difficult, or laborious reſpiration; a bad taſte of the mouth; the tongue being covered with white or yellow mucus; throwing up of the food half digeſted; the appetite being for the moſt diminiſhed, the belly often bound; pains of the ſtomach or inteſtines; borborygmi; ſometimes diarrhœa, aſh-coloured or greeniſh fæces; ſlight fainting-fits, eſpecially when the ſtomach is empty; the ſenſation of a ball riſing to the fauces, and ſticking there; palpitations of the heart; flying ſweats; great changeableneſs of the pulſe; pains in the head, eſpecially in the forehead and temples; *tinnitus aurium*; watching at night; diſturbed ſleep; paleneſs of the face; lowneſs of ſpirits; fear; and, laſtly, emaciation. Such are conſidered as being the ſymptoms in common to every kind of depraved digeſtion. There are ſome, however, peculiar to each kind of crudity, but they are chiefly diſtinguiſhed by the taſte of the mouth, and eructations; for, in the alkaleſcent ſpecies, a putrid taſte, like that of rotten eggs, is perceived, and the patients loathe every kind of fleſh, ſoup, or animal food; and, on the contrary, nothing but acids, aceſcent things, and vegetables, are deſired. But, in the acid crudity, an unuſual acidity infects the ſaliva, and whatever food, or fluid, is diſcharged from the ſtomach, along with the eructation or flatus, is accompanied with an acid taſte, burns the fauces, and, when thrown on an earthy ſubſtance, effervesces like vinegar.

In this ſpecies the patients frequently complain of a ſenſe of burning in the ſtomach, as if it were corroded. Laſtly, the rancid crudity follows the uſe of fatty, oily articles of diet, and eſpecially things prepared with butter or milk; and the fauces and mouth are affected with eructations like rancid butter.

THE PROGNOSIS.

41. I HAVE ſhewn in what manner the different kinds of depraved digeſtion manifeſt themſelves. It remains for me to ſpeak of the diſeaſes which are the uſual ſequels of them. Theſe are almoſt innumerable; but ſuch as are of more frequent occurrence ſeem to be, cardialgia; colic-pains; various kinds of alvine diſcharges; hypochondriaſis; cachexy; ſcurvy *; phthiſis; atrophia; obſtructions in the lower belly; dropſy; arthritis; gout; nephritic, and other chronic affections; and likewiſe acute or ſlow gaſtric fevers; and putrid, malignant, and ſometimes exanthematic fevers. We muſt not, therefore, neglect ſuch kinds of morbid digeſtion, and, as far as the cauſes of them admit, correct them to the beſt of our power. Our expectations of a cure, however, reſt intirely upon the recency of the complaint, upon its ſlightneſs, and upon the tractableneſs of the patient in reſtricting himſelf to the regimen propoſed by his phyſician. We muſt not, however, haſtily pronounce our judg-

ment; as a relapſe of the complaint is frequently occaſioned by the ſlighteſt errors in the diet. Sometimes, likewiſe, it is kept up by cauſes which it is impoſſible to remove; among which is to be claſſed paralyſis of the ſtomach, which is ſeldom and very difficultly curable.

* The tranſition from depraved digeſtion to hypochondriaſis, and from the latter to ſcurvy, eaſily takes place. Upwards of twenty-five years ago, Domenico Bertolati, an inhabitant of Fayence, in the prime of life, and of a melancholico-bilious temperament, laboured under an acid crudity, in conſequence of which he not only fell into hypochondriaſis, but likewiſe into actual ſcurvy, confirmed by all its ſymptoms; which, however, was not of the putrid kind, as it generally is, but of an acid and cold nature. Such was the extent and progreſs of the ſpontaneous acidity, that the ſaliva and other fluids in taſte reſembled the moſt acrid and corroding vinegar. Nor could this acidity by any contrivance be blunted or corrected, although he was under the care of ſeveral excellent phyſicians for a long time; ſo that, being at length exhauſted with a ſlow conſumption, and the powers of life gradually failing, he expired. I have ſeen a nobleman of Florence labouring under ſcurvy from the ſame cauſe, who was attended by the profound and ſkilful Manetti. Such was the diſpoſition to an acid crudity, that he could neither take the ſoup of fleſh, nor fleſh itſelf, excepting of foreign fowl prone to alkaleſcence. For all other food, even ſoups and fleſh, contracted a moſt diſagreeable acidity on his ſtomach. The vegetable diet, ſo highly recommended by Cocchi, on being ſeveral times tried, always proved highly detrimental. Such inſtances, I confeſs, are rare, but as they have actually happened, and been witneſſed by myſelf, I could not paſs them over unnoticed.

THE CURE.

42. As the cauſes of the loathing of food are nearly the ſame as thoſe of depraved digeſtion, ſo

the indications and method of cure propoſed with reſpect to it (34. to 37.) apply to this diſeaſe alſo. In general, aperients and bitters are recommended, as promoting the ſecretion of the gaſtric juice, bile, and pancreatic fluid, increaſing the quantity of them, and reſtoring their natural craſis. They ought not, however, to be uſed indiſcriminately, and without a judicious ſelection. For, as in every other diſeaſe, the patient's age, temperament, and ſex, and the climate and ſeaſon, muſt be conſidered; and, according to the variety of theſe, ſometimes one, ſometimes another ſet of them, ought to be employed. In warm and dry temperaments, the principal aperients and bitters are, graſs, ſuccory, ſorrel, ſtrawberries, agrimony, and dandelion; while, on the contrary, in cold and moiſt habits, it is better to employ the roots of ſmallage, parſley, carrots, wormwood, ſouthernwood, horehound, and the like. The ſame may be ſaid of cathartics and laxatives. In the former caſe, cryſtals of tartar, tamarinds, manna, and neutral ſalts; in the other, rhubarb, aloes, the fixed ſalts of plants, and Venice ſoap, will be preferable. The precepts laid down in the therapeutics, therefore, muſt be well attended to, and the remedies cautiouſly accommodated to circumſtances.

43. In the ſpecies of depraved digeſtion occaſioned by laxity and atony of the fibres, or paralyſis of the nerves, in general, ſtrengthening

remedies are employed with advantage. The chief of which are, orange-peel, bark, and caſcarilla; valerian-root, madder, and quaſſy-wood; acidulous chalybeate waters, as thoſe of Spa, and ſimilar waters; and iron itſelf, variouſly prepared, to be uſed diſſolved in a vegetable menſtruum by perſons of a delicate habit, but reduced to a fine powder by thoſe of a more robuſt conſtitution. It is likewiſe of the greateſt ſervice, in paralyſis of the ſtomach, to waſh the patient with cold water, to cauſe him to ſwim in it, to drop cold water on the epigaſtrium, to frequently rub his limbs, to make him uſe exerciſe in travelling and riding on horſeback; and he ought to live in a pure atmoſphere. When there is too great a tendency in the meat to corrupt on the ſtomach, fleſh of the firmeſt texture, as beef, ought to be employed. The acid crudity is beſt prevented by watery drink, by fleſh, particularly that of fowl and game, fiſh, eggs, and pot-herbs of the cruciform plants. On the other hand, the rancid crudity is oppoſed by acid and aceſcent articles, by vegetable diet, by the legumina and farinacea, by acidulous wine, and by abſtinence from fleſh, from eggs, and from fatty or oily things.

CHAPTER IV.

CONCERNING NAUSEA AND VOMITING.

44. *Nauſea* and *vomiting* appear to differ in degree only. The former generally precedes vomiting, and is a fruitleſs deſire to vomit, frequently accompanied with ſome effort. The latter, or vomiting, is a violent rejection by the mouth of the contents of the ſtomach, or its neighbourhood. But, in the ſame manner as a ſlight motion of the fibres of the œſophagus and inverſion of the ſtomach occaſion nauſea, ſo a more violent one, by frequently drawing the diaphragm and abdominal muſcles into a ſpaſmodic contraction, occaſions vomiting.

45. The proximate cauſe of each affection is, a convulſive irritation of the œſophagus, or ſtomach, or neighbouring parts, of ſuch a kind, however, that the motion is inverted from below upwards. This may be occaſioned by all thoſe things which diminiſh, increaſe, or vitiate the appetite (27. 28. 29.), or which retard the digeſtion of the food (39. 40.). Of theſe ſome are inherent in the ſtomach, ſome are ſituate out of it, but in ſuch a way as to affect it by connection, ſenſibility, or conſent. The morbid conditions inherent in the ſtomach, and which excite continued vomiting, are, obſtruction, callus, or

ſcirrhus of the pylorus; ulceration, abſceſs, hernia *, or caner of the ſtomach; relaxation and atony of the cardia; blood diſtending the veſſels of the ſtomach, or ſtagnating there; gaſtritis †; a colluvies of vitiated humours, the taking in, and retaining of acrid, poiſonous, fatty, and putrid things; and worms. Thoſe which exiſt out of the ſtomach are, external injuries of the head; wounding of the brain; any injury of the ſenſorium commune; the power of imagination; irritation of the *par vagum*, pharynx, or larynx; affections of the liver ‡, pancreas, meſentery, ſpleen, kidneys, and bladder; inflammation, ſwelling, obſtruction, ſtrangulation, and ſpaſm of the muſcles of the abdomen or inteſtines; the motion of a carriage or ſhip, and the ſight of a diſagreeable object. P. C. Abilgaard mentions an inſtance of ſympathetic vomiting having been excited in conſequence of the application of a ligature to a ſarcomatous tumour ||.

* Concerning herniæ of the ſtomach, and their effects, ſee the note at the end of this chapter, ſubjoined to par. 52.

† An inſtance of vomiting being occaſioned by this cauſe, and, in conſequence of gangrene ſupervening, giving riſe to death, appears from a caſe quoted by Baron, in the *Paris tranſact.* ann. 1748. See alſo *Com. Lipſ.* vol. ii. P. i. p. 31.

‡ After the moſt obſtinate vomiting of the ingeſta, and of a black and fetid matter, accompanied with bound belly, Lieutaud diſcovered in the body of an old woman the leſſer lobe of the liver excavated, in which a putrid ſanies adhering had corroded the ſtomach, and opened a paſſage for itſelf into it. *Hiſt. anat. med.* i. vol. i. p. 35.

|| *Collect. ſoc. med. Haun.* vol. i. p. 176.

46. Hence the varieties of *nauſea* and *vomiting* are manifold. For the complaint is either *idiopathic*, or *ſympathetic*; *primary*, or *ſecondary*, and *ſymptomatic*; as alſo *periodical*, *frequent*, *ſalutary*, *critical*, *noxious*, &c. Likewiſe, according to the nature of the matter ejected, vomiting is divided into *phlegmatic*, *bilious*, *eruginous*, *atrabiliary*, *black*, *verminous*, *ſtercoraceous*, *bloody*, &c. But it is not uncommon even for blood to be effuſed into the ſtomach, and to be thrown up by vomiting, and for this to happen in ſome of the ways in which other hemorrhages take place. A more frequent cauſe, however, is an obſtruction of the ſpleen. For the *vaſa brevia* being filled with ſtagnant blood open, and pour their contents into the ſtomach.

CHOLERA.

47. If frequent vomiting takes place, while at the ſame time a purging happens, in conſequence of which a copious and violent evacuation from the mouth and anus is occaſioned, the complaint is named *cholera*. It is a diſeaſe full of danger, and frequently proves fatal in a few days, or even hours. It ariſes from the cauſe of the vomiting being propagated likewiſe to the inteſtines and other abdominal viſcera, or from a ſpaſmodic and inordinate agitation of the ſtomach and inteſtines, in conſequence of which, whatever is contained in them, or is carried thither, is

violently expelled. Its more frequent remote cauſes are, the immoderate uſe of ripe fruits, liquor and food apt to run into fermentation, very acrid bile, acrid purgatives, emetics, and, laſtly, ſome peculiar acrimony generated in the ſyſtem, or introduced into it. Its attacks are moſt frequent in the ſummer-time. It is generally diſtinguiſhed into *moiſt* and *dry*. The dry takes place, either when a copious diſcharge of fluid happens from the anus alone, or mouth, or, contrary to what happens in the humid ſpecies, a very ſparing general evacuation occurs. It is likewiſe divided into *ſpurious* and *true*. In the former, the meat and drink are paſſed in a ſtate of corruption; in the latter, the bile or other fluids are voided putrid. When it is ſevere, it is accompanied with fever, although it is deſcribed by moſt authors as having been obſerved unaccompanied with it.

HICCUP.

48. Hiccup frequently precedes or ſucceeds to vomiting. At one time, however, it is ſolitary, at another it ſupervenes upon other complaints. It may be defined to be, the ſudden and exceſſive interruption of the breath, when very rapidly inſpired, in conſequence of which it is expelled with ſuch force from the breaſt, that, ſtriking againſt the glottis and fauces, it occaſions a momentary ſound of a peculiar kind. Its chief and proximate cauſe appears to be, a ſpaſmodic,

troubleſome, and violent contraction of the diaphragm, which is ſo great, that for a moment the bottom of the thorax is drawn in with pain, and violently compreſſes the lungs. In general, the abdominal muſcles alſo are at the ſame time convulſed, in conſequence of which the thorax being more and more conſtricted, a more violent expulſion of the air from the lungs takes place. The ſtomach alſo, the œſophagus, and the glottis itſelf, appear to be affected at the ſame time. Nay, the commencement of the complaint is generally in the ſtomach itſelf, and is propagated from thence to other parts.

49. Whatever, therefore, can diſtract, or ſharply irritate the œſophagus, ſtomach, larynx, and diaphragm, either immediately or remotely, will be liable to occaſion hiccup. Of this kind are, large boluſſes paſſing the œſophagus with difficulty, a large draught ſuddenly taken, too great fulneſs and diſtenſion of the ſtomach, acrid food, medicine, poiſon or fluid of any kind taken into the ſtomach, a violent cough, pus, water, or ichor collected in the cavity of the thorax, irritating the phrenic nerves, or diaphragm; all kinds of convulſive affections of the abdominal viſcera, eſpecially of the inteſtines, and of the bladder; and, laſtly, inflammation, wounding, diſtraction, eroſion, and ſimilar affections of the diaphragm itſelf.

THE DIAGNOSIS AND PROGNOSIS.

50. THE *diagnoſis* of all theſe affections (44. 47. 48.) is eaſy. Nor is the *prognoſis* attended with much difficulty. Immediately previous to vomiting, a more copious flow of ſaliva takes place; the under lip quivers; the hypochondres become tenſe; and nauſea, with turning of the ſtomach, occurs. But both nauſea and vomiting, when they are occaſioned by inconſiderable cauſes, are free of danger, and *vice verſa*. Cuſtomary, or critical vomiting, or vomiting of a ſuperfluous, indigeſtible, putrid aliment or fluid, returning at intervals, is generally ſalutary. It is likewiſe uſeful when it throws off poiſons which have been ſwallowed; if it ſupervenes upon a looſeneſs; and if neither from the quantity nor quality, or concomitant circumſtances, it gives cauſe for alarm. It is worſe if it be pure, or greeniſh, or bloody, eſpecially when ſupervening on exanthematic diſeaſes *; or livid, or ſanious, or fetid, or ſtercoraceous, or black. But the worſt kind is that which is variouſly diverſified, or when it is followed by convulſions, hiccup, loſs of ſtrength, labour, or anxiety; as alſo that which ſupervenes on diſeaſes of the head, incarcerated hernia, ileus, and inflammations. That which proceeds from pregnancy, or ſuppreſſion of the menſes, although it be bloody †, does not occaſion great danger; nor is that kind always hurtful which is occaſioned by congeſtion of the

ſpleen, unleſs it be accompanied with grumous, thick, acrid, or atrabiliary blood.

* See Vol. II. & III. *Concerning the Exanthematic Complaints*, where frequent mention is made of *nauſea* and *vomiting*, as ſymptoms of them.

† The following inſtance of vomiting of blood and fleſh, as being uncommon, and terminating favourably, we have thought proper to tranſcribe from the author's papers. [*Germ. Editor*].

" A woman, in conſequence of long complaining of nauſea and loſs of appetite, was gently purged. Afterwards, however, ſhe was ſeized with vomiting, in conſequence of which, much blood, with two pieces of fleſh, were thrown up. One piece reſembled a pike's liver, the other the ſubſtance of the lungs, and was very large. Afterwards ſhe was reſtored to her former health by means of ſtrengthening remedies. See the *Miſcel. N. C.* an. vi. obſ. xxx. p. 63.

51. The ſpurious, or dry cholera, is free of danger. But the moiſt and true ſpecies is a very acute, and frequently fatal complaint. It is ſometimes reſolved by a critical ſweat, or by urine voided with heat. Not unfrequently it induces inflammation, gangrene, ſyncope, or lientery, and ſlow fevers. Hiccup, which is alike familiar to children, hypochondriacal and hyſterical people, is not ſo much to be dreaded as that which ſupervenes upon acute diſeaſes and malignant fevers, ileus, encyſted hernia, exceſſive evacuations, eſpecially hepatitis, *iſchuria veſicalis*, and wounds of the ſtomach and diaphragm. Sneezing when it ariſes allays hiccup.

THE CURE.

52. THE cure is performed by thoſe remedies which remove the cauſes. Nauſea, vomiting, cholera, and hiccup, are allayed, if the cauſe of them be in the ſtomach, œſophagus, or duodenum, by thoſe things which gently promote vomiting; by diluents, demulcents, oily remedies, and clyſters; and, laſtly, by ſtrengthening remedies, and anodynes containing opium *. Under this head likewiſe fall, pure wine drunk warm, ſalt of wormwood mixed with lemon-juice, and other remedies, of whatever kind, which prove agreeable to the ſtomach, and applied externally alſo with theriac. If they proceed from other cauſes, theſe muſt be occaſionally oppoſed; or at leaſt the ſymptoms muſt be mitigated by proper remedies. Comparett mentions having cured a caſe of vomiting which happened in the hoſpital of Padua, ann. 1771, in conſequence of a ſwelling of the pylorus, by employing corroſive ſublimate †. Michellott cured a vomiting of blood yielding to no remedies, which happened to a young man during the winter-ſeaſon, by means of very cold drink ‡. The powers of muſk, camphor, and opium, in caſes of hiccup occaſioned by malignant and pernicious vapours affecting the diaphragm and ſtomach, and likewiſe the efficacy of an application of cantharides, are now ſo well known, that it is unneceſſary to dwell upon them. When the diſeaſe has been removed, the niceſt

regimen, with reſpect to diet, ought to be adopted, that the complaint, as very frequently happens, may not return.

* See, in the following chapter, (par. 70. in the note ††), the obſervations concerning the anti-emetic virtue of Columbo root, and other remedies for allaying vomiting, mentioned in par. 111.

† *Oeeurſ. med.* p. 343. But Pibraci contends, that many bad conſequences are occaſioned in the ſtomach by the uſe of corroſive ſublimate, and that chronic diſeaſes frequently follow its employment (*Mem. de l'acad. de chir.* vol. iv.); although ſome complaints appear to be occaſionally overcome by it. F. C. Medicus ſeems to entertain the ſame opiuion. See Suppl. ii. ad decad. ii. *Com. Lipſ.* p. 225.

‡ *Com. inſt. ſcient. Bonon.* See, in the *Adverſ. med. pract.* of Ludwig, P. i. p. 165. an eſſay entitled *Diſſertatio de ratione veneſectionis in vomitu cruento laborantibus.*

Note.——In concluſion, I ſhall adduce ſome remarks taken from the author's papers, relating to vomiting and its effects. "Hildanus mentions a hernia of the ſtomach, which ſucceeded to the violent reaching and vomiting occaſioned by ſwallowing an emetic. Garangeot alſo, in vol. iii. of the *Acad. chir. Par.* relates two hiſtories of a ſimilar hernia, which were probably unjuſtly called in queſtion by Gunz, in his treatiſe on *Hernia*, publiſhed at Leipſic, an. 1774, while he himſelf adduces proper inſtances of this kind of hernia. The ſymptoms are, a ſoft ſwelling in the epigaſtric region, more or leſs extenſive, which yields and diſappears in the ſupine poſture; vomiting aud depraved digeſtion; anxiety; ſuffocation; a rending ſenſation; pains; and bound belly. It is preceded by violent blows. On the hernia being replaced, and forcibly retained, the ſymptoms ceaſe." See likewiſe Piplet the younger; *Mem. de l'acad. de chir.* vol. xi. p. 294. [*Germ. Editor.*]

CHAPTER V.

CONCERNING LOOSENESS OF THE BOWELS.

53. We ſay that the belly is looſe when the fæces are frequently paſſed in a liquid ſtate, and having a different appearance from that which is natural. The chief kinds of looſeneſs are reduced under lientery, cœliac paſſion, diarrhœa, and dyſentery; and, laſtly, the bloody fluxes, namely, hemorrhages, the hepatic and black flux. Each of theſe, therefore, merit a ſhort diſcuſſion.

LIENTERY.

54. When the meat and drink, without undergoing digeſtion or corruption, but in the ſame crude ſtate in which they have been taken in, ſcarce at all changed, are paſſed quickly without pain, or a mixture of blood or bile,—whether the food be liquid or ſolid,—the affection is named by the Greeks *lientery*, and by the Latins *lævitas inteſtinorum*. The proximate cauſe of ſuch a diſcharge ſeems to be, weakneſs of the digeſtive powers, and too great laxity of the fibres of the pylorus, in conſequence of which the mere power of the reſpiration forces down the food from the ſtomach undigeſted. Sometimes, however, the capacity of the pylorus has been obſerved to be enlarged without lientery *. I am diſpoſed to think, therefore, that in lientery the irritability of the

ſtomach and inteſtines is increaſed, in conſequence of which the ingeſta are expelled ſooner than their digeſtion requires. This is proved by the cauſes preceding lientery (for it is frequently preceded or accompanied by cynorexia), as alſo by the method of treatment to which it generally yields; for it is frequently cured by the remedies oppoſed to exceſſive irritability. I do not deny, however, that ſometimes weakneſs of the ſtomach, and ſluggiſhneſs of the digeſtive fluids, are conjoined with exceſſive irritability of the inteſtines †.

* Morgagni, *Epiſt. anat. med.* xxxi. n. 7.

† Exceſſive irritability of the inteſtines is ſometimes blamed by Van Swieten, § 719. Vid. *Pro cauſa vires.*

THE CŒLIAC PASSION.

55. THE *cæliac paſſion*, or *cæliac flux*, as it is named, differs little from lientery. In it the ſtools conſiſt of digeſted food, but are thin and white, in conſequence of being interſperſed with chyle. The fault is not, therefore, to be referred to the morbid or defective action of the ſtomach; but its real cauſe may be conſidered as being checked abſorption of chyle into the lacteals, either from defect of the bile and pancreatic juice, which have not ſufficiently attenuated the chyle; or from a fault of the inteſtines, on account of their being too weak and languid; or from the lacteal veſſels having loſt their power of abſorption, or being cloſed, obſtructed,

or compreſſed, by a cicatrix, and denying a paſſage to the chyle. All of which circumſtances, as they may take place from a variety of cauſes, readily appear to a perſon who is even ſlightly acquainted with phyſiology.

DIARRHŒA.

56. As in the alvine diſcharges mentioned above, it is neceſſary principally to conſider the nature of the matter paſſed; ſo, in the following one, the quantity of it is chiefly attended to. Every frequent, thin, and copious diſcharge by the belly, whether it conſiſts of putrid and liquid fæces, or the bile, mucus, fat, ſerum, or all of theſe be mixed with them, is named *diarrhœa*. It is generally unaccompanied with pain; ſometimes, however, ſome pain is perceived in the inteſtines. But, according as one humour is diſcharged more copiouſly than the others, it is named, either *bilious*, or *mucous*, or *pinguedinous*, or *ſerous*, or *aqueous*, and *colliquative*. It is divided alſo into *critical* and *ſymptomatic*.

57. Its proximate cauſe is, too copious an appulſe of humours to the inteſtines, and an increaſed periſtaltic motion, in conſequence of which they are not proportionably taken up by the abſorbents. The remote cauſes are, copious drink, whether warm or cold, which is carried neither to the kidneys, nor to the pores of the ſkin, ſufficiently ſoon; acrimonies introduced into the ſyſtem along with the food, drink, air, and medi-

cines, or generated internally by ſtagnation, dyſpepſia, and putrefaction; an accumulation and depravation of the fluid of the ſtomach *, inteſtines, pancreas, and liver; ſuppreſſion of watery excretions of every kind, and of the inſenſible perſpiration; tranſlations of acrid and vitiated matters to the internal parts of the ſyſtem; dyſcraſy of the whole blood, or unequable diſtribution of it, and a conflux of it to the internal parts, on account of laxity of the fibres of the inteſtinal canal; a deranged ſtate of the nerves; emotions of mind, eſpecially anger; difficult dentition; worms; the immoderate uſe of fruits and fermenting things; unpurified wine; putrid waters †; exceſſive heat; and acute fevers.

* Sometimes the cauſe of diarrhœa has been diſcovered in the ſtomach itſelf. See Morgagni, *Epiſt. anat. med.* xxxi. n. 9. 10.

† Pringle and Hebenſtreit affirm this; *Anthropologia forenſ.* ſect. i. c. ii. § 12.

DYSENTERY.

58. WHEN to the looſe ſtools are ſuperadded tormina and frequent pains of the bowels, with a frequent deſire of going to ſtool, while the fæces are very fetid, and frequently ſmall in quantity, intermixed with mucus-like fat, or with blood *, or ſometimes even abound with filaments, carunculæ, and thin membranes, ſuch a complaint is named *dyſentery*. This complaint was named by Celſus *tormina*. Hence it appears that diarrhœa and dyſentery differ in degree only, as in the latter the ſymp-

toms are much more ſevere, and the proximate cauſe, which depends upon ſome acrimony, affects the ſenſibility more, proves more irritating, and adheres more firmly to the inteſtines, vellicating, corroding, inflaming, and exciting them to action; cauſing pains, ſpaſms, and dejections; abrading the mucus; expreſſing the blood from the dilated or lacerated extremities of the veſſels; or tearing filaments and membranous parts from the villous coat of the inteſtines, and forcing them out with the fæces. If the *ſmall inteſtines* only be affected, the pain is moſt acute and moſt excruciating about the umbilicus; the belly is not evacuated immediately after the pains; and the blood is mixed more with the fæces. If the *large inteſtines* be affected, the pain is more obtuſe, not ſo conſtant, is more diſtant from the umbilicus, and immediately followed by ſtools; and the blood and purulent matter ſlightly adhere to the excrements, or only float upon them. But it frequently happens that both parts of the inteſtinal canal are affected, in which caſe theſe phenomena are obſerved to be combined together.

* Although blood be abſent, if the other ſymptoms be preſent, the diſeaſe is dyſentery, as Sydenham alſo obſerves, ſect. iv. c. iii.

59. The remote cauſes are nearly the ſame as thoſe of diarrhœa (56.). Among theſe are to be enumerated, "a hot ſummer, ſucceeding to a dry, cold winter, but a rainy, warm ſpring *.—A dry, cold ſpring, ſucceeding to a warm, rainy, mild winter †;" a continuation of dry weather;

exceſſive heat; warm climates; the moiſt atmoſphere of low ſituations; ſudden and unuſual cold; a choleric or atrabiliary temperament; and the meridian of life ‡.

* Hippocr. aph. iii. n. 11. † *Id.* aph. iii. n. 12. ‡ *Id.* n. 30.

60. Beſides, dyſentery is ſometimes *ſporadic*, ſometimes *epidemic*; ſometimes *acute*, at other times *chronic*; ſometimes *benign*, *malignant*, *contagious*, and confined to camps; ſometimes it is conjoined with teneſmus, ſometimes it terminates in it, and ſometimes it is free of it. Teneſmus, again, is that troubleſome and painful irritation of the rectum, which occaſions generally a fruitleſs and repeated deſire of going to ſtool. It appears to ariſe from exceſſive ſenſibility of the rectum, occaſioned by the abſence of the mucus, and denudation of the inner coat, in conſequence of which, upon the application of any ſtimulus, it contracts violently, and is drawn, as it were, into a ball, cauſing the deceptious ſenſation of a body attempting its paſſage. Teneſmus may likewiſe be preſent without dyſentery. For the rectum, when irritated by acrid mucus, by a ſpaſm, by aſcarides, by inflammation, by the piles, by calculi in the bladder, and by indurated fæces retained in the inteſtines, falls into this complaint. But in that caſe there is only a diſcharge of mucus tinged with blood, and a prolapſus ani frequently happens; while the fæces, when voided, preſerve their natural form, colour, and condition.

BLOODY FLUX.

61. A BLOODY diſcharge from the inteſtines is alſo pretty frequently mentioned by practitioners, and is ſaid to be preſent when pure blood, as in hemorrhages, or that which is diluted, or dark coloured, or black, or ſhining, comes off along with the ſtools. For, in conſequence of the eruption, dilatation, or eroſion of the veſſels of the ſtomach, inteſtines, liver, or pancreas *, frequently a great quantity of blood is poured out, giving riſe to a bloody flux from the belly. If the blood be diſcharged pure, bright, and in large quantity, without ſymptoms of the hemorrhoids flowing, it is named by Lieutaud *fluxus meſentericus*, but more properly *hemorrhagia inteſtinalis*. If the blood be more diluted, and like water in which fleſh has been waſhed, it is named by the ancients *fluxus hepaticus*, and by us the *dyſenteria hepatica* of Gordon or Ballonius, or the *hepatirrhœa vera* of Sauvages. It is ſuppoſed to be carried from the veſſels of the liver by the ductus choledochus, when the liver labours under atony and laxity, or any other morbid ſtate, as ulceration or abſceſs. I will not take upon me to deny the exiſtence of the real hepatic flux, noticed by Lieutaud and Ludwig. But a ſimilar one, and indeed unaccompanied with pain, has been ſometimes obſerved to proceed from the inteſtines and pancreas, according to the teſtimony of moſt moderns, among whom are Riverius, Ettmuller,

Lieutaud, Ludwig, and Sauvages. This flux has been named by Trallianus the *cæliac affection* †. The diſeaſe by Celſus named *cæliacus ventriculi morbus* is accompanied with hardneſs and pain of the abdomen, bound belly, difficult reſpiration, and flatulency ‡. At length, if the ſtools become black, fetid, and acrid, and, what is worſe, ſhining, the *fluxus niger*, and *fluxus atrabilaris*, or the *morbus niger* of Hippocrates and Hoffman, or the *fluxus ſpleneticus* of Gordon, or the *dyſenteria ſplenetica* of Ballonius, are ſaid to take place. For it generally ariſes from coagulated, ſtagnant, putrid, black, acrid blood, ſometimes from the rupture, ſometimes from the eroſion, of the veſſels of perſons labouring under cancerous ulcers of the ſtomach, or inteſtines. And ſuch bloody diſcharges ſupervene, eſpecially in ſcorbutic people, when accuſtomed evacuations are ſuppreſſed; in perſons labouring under fevers of a bad kind, both continued and intermitting; in melancholic people, and in thoſe affected with an obſtruction of the ſpleen or liver.

* Boerhaave thinks that this happens when a cathartic is taken by a perſon labouring under a *ſcirrhous pancreas*. In conſequence of its increaſing the circulation, the veſſels about the ſchirrhus are preſſed upon, and at length burſt. *De virib. medicam.* p. 205.

† L. viii. ‡ L. iv. c. xii.

THE PROGNOSIS.

62. In *lientery*, and in the *cæliac paſſion*, the patients derive no benefit from their aliment, but

fall into a bad habit of body, as atrophia, tabes, and dropſy. There is a burning heat in the hypochondres, accompanied with moſt diſtreſſing thirſt, and ſometimes loathing of food. Sometimes the diſeaſe is prolonged, at other times it quickly cuts off the patient. It is more eaſily removed in early life, if the urine flow copiouſly, and the body begin to be nouriſhed. It is very difficultly cured in advanced life, eſpecially if it have ſucceeded to long-continued dyſentery, if the mouth be ulcerated, the face red, the belly thin and wrinkled, and if it affect old people long. "In long-continued lientery, eructations ſupervening for the firſt time afford a favourable prognoſtic." Hippocr. aph. vi. n. 1.

63. In every looſeneſs of the belly, the following prognoſtic of Hippocrates ought to be kept in remembrance: "In derangement of the bowels, and ſpontaneous vomiting, if natural ſtools be paſſed, they are eaſily borne; otherwiſe, not *." Celſus, likewiſe, appoſitely remarks: "It is frequently a good ſign for the belly to continue looſe for a day, and when it ceaſes to do ſo within ſeven days; for the body is purged, and the morbid matter advantageouſly evacuated. But continuance of the complaint is dangerous: for ſometimes it occaſions tormina and fever, and reduces the ſtrength †." To this place belong other prognoſtics of Hippocrates. "After a long-continued diarrhœa, ſpontaneous vomiting ſupervening removes the diſeaſe ‡.—

When patients labouring under ophthalmia are ſeized with a diarrhœa, it is a favourable ſymptom ‖.—If a violent diarrhœa ſupervene on a leucophlegmatia, it reſolves the diſeaſe §.—When patients labouring under fever have become deaf, a diſcharge of blood from the noſe, or a looſeneſs coming on, puts a ſtop to the diſeaſe ¶.—A looſeneſs ſometimes removes a pain of the præcordia, legs, and lower parts, ſuddenly occaſioned without fever **. In diſcharges from the bowels, changes of the fæces taking place are ſerviceable, if they do not take place for the worſe ††.—Perſons who labour under a long-continued diarrhœa are not freed from the complaint unleſs violent pains take place in the feet ‡‡."

* Aph. ii. ſect. 1. † Lib. ii. c. x. ‡ Aph. ſect. vi. n. 15. ‖ *Coac.* 224. *De judic.* 83. § Aph. ſect. vii. n. 15. and *Coac.* 457. 482. ¶ Aph. vi. n. 60. *Coac.* 210. ** *Coac.* 294. †† Aph. ii. n. 14. ‡‡ *De indicat.* n. 17.

64. The ſymptoms which follow are of a more unfavourable kind. "A diarrhœa ſupervening upon a chronic complaint is unfavourable *.—If a violent diarrhœa occur in pregnancy, it endangers abortion †." This, however, does not invariably happen; for ſometimes during the whole period of pregnancy the belly continues looſe without harm, ceaſing to continue ſo on delivery. Hence, as the phyſician's aid is exerted in vain, it is to be intruſted to nature ‡. "Very red excrements being paſſed in a looſeneſs of the belly are bad; it is alſo very unfavourable when they

are of a paliſh or whitiſh green, or frothy, or watery. It is likewiſe unfavourable when the excrements are ſmall in quantity, glutinous, ſmooth, and of a pale green. It is a very bad ſymptom alſo, when a looſeneſs takes place in comatoſe affections ‖.—When the belly becomes very looſe in ardent fever, it threatens death §.—When perſons labour under tabes, and their hair falls out, on a diarrhœa ſupervening they are carried off ¶.—A diarrhœa ſupervening in tabes is fatal **.—In thoſe who have been long falling off, unaccuſtomed purging of the belly, raſhly induced, and accompanied with a tremulous voice, announce death ††."

* Aph. v. ſect. viii. † Aph. xxxiv. ſect. v.

‡ Scardona (*De morb. mulier.* c. ix. § 5.) very properly obſerves; "That it has been remarked by Hippocrates, that a pregnant woman labouring under dyſentery, if ſhe be to recover from her illneſs, ought to be relieved, either upon the day of delivery, or ſhortly after it." The ſame are the obſervations of Schenck and Mauriceau.

‖ *Coac.* 611. § *Coac.* 129. ¶ Aph. xii. ſect. v. ** Aph. xiv. ſect. v. †† *Coac.* 634. 258.

65. Dyſentery is not a ſlight diſeaſe, eſpecially the *malignant* ſpecies, which is accompanied with fever, and the *epidemic* one. In it inflammation, or gangrene, often ſupervenes. Sometimes, likewiſe, dyſentery terminates in ulcers of the inteſtines. "Dyſentery accompanied with thin ſtools is unfavourable *.—When a bilious vomiting occurs in perſons labouring under teneſmus, at the beginning of the complaint, it is a bad ſymptom †.—Dyſenteries which com-

mence with nauſea, to which vomiting afterwards ſucceeds, are almoſt all fatal," as Baglivi obſerves; *that is*, if inflammation be preſent in the inteſtines ‡. "All tormina are bad, if they come on with fever, accompanied with various coloured fæces, or inflammation of the liver, præcordia, or abdomen, or if they be attended with great pain, depriving the patient of appetite, and occaſioning thirſt ‖.—In dyſenteries of long ſtanding, loathing of food is an unfavourable ſymptom, both at other times, and when fever ſupervenes §.—If dyſentery be occaſioned by black bile, it proves fatal ¶." For black bile is extremely cauſtic, and quickly occaſions gangrene. "If, when a perſon labours under dyſentery, carunculæ come off, it proves fatal **.—When a perſon labouring under obſtruction of the ſpleen is ſeized with dyſentery, which terminates in dropſy or lientery, he is carried off ††.—Whenever a patient labours under moſt of the bad ſymptoms, it very quickly proves fatal ‡‡.—This diſeaſe proves fatal chiefly to children between the fifth and tenth year; other periods of life run leſs riſk §§." When the complaint originates from a metaſtaſis, it is more dangerous than when it proceeds from the ingeſta. When the pains ſuddenly ceaſe, and are ſucceeded by an involuntary diſcharge of black fetid ſtools, accompanied with loſs of ſtrength, a ſmall, weak pulſe, and other bad ſymptoms, it denotes that the dyſentery has terminated in a fatal gangrene. It is generally a ſymptom of death,

when the teneſmus is ſo violent that the ſphincter ani continues open, in conſequence of which clyſters are immediately returned, or when it is ſo much conſtricted, that nothing can be admitted. Hiccup ſupervening upon a diarrhœa or dyſentery, or ſpots breaking out upon the face, or a black puſtule behind the ear, are fatal ſymptoms. When a black puſtule breaks out behind the left ear, it is ſuppoſed by ſome that it announces that the fatal event will happen on the twentieth day. Riverius alſo adds, that œdematous ſwellings of the hands prove fatal.

* Hippocr. aph. 23. ſect. vii. † *Coac.* 463. ‡ *In Append. ad dyſenter.* || Hippocr. *Præd.* ii. n. 118. *Id.* epid. vi. viii. n. 1. § Aph. 24. ſect. iv. ¶ Aph. 26. ſect. iv. ** Aph. 43. ſect. vi. *Coac.* 466. †† *Id. Præd.* ii. n. 118. ‡‡ *Id. ib.* n. 119.

66. We draw a favourable concluſion from ſtools being paſſed ſomewhat ſolid, mixed with fluid, accompanied with a diſcharge of flatus. "If flatus begins to be diſcharged, it announces a ſpeedy return of health *.—It is ſeldom critical and benign: however, when it ſupervenes on madneſs, it is favourable †.—Dyſentery ſupervening upon obſtruction of the ſpleen is favourable ‡: as alſo that which is not of great duration ||.—In general, moſt hope may be entertained in dyſentery when feweſt of the bad ſymptoms are preſent §."

* Baglivi, *Prax. med.* lib. ii. c. iii. † Hippocr. aph. 5. ſect. vii. ‡ *Id.* aph. 48. ſect. vi. || *Coac.* 466. § *Id. Præd.* ii. n. 118.

67. Pure bloody ſtools are liable to the ſame danger and changes as other hemorrhages; hence the remarks elſewhere delivered may be called to mind. The *fluxus hepaticus* generally terminates in dropſy. The *fluxus niger* carries off the patient ſometimes by a rapid exhauſtion of his ſtrength, and ſometimes by a ſlow conſumption. A diſcharge of black bile upwards or downwards, in whatever diſeaſes it happens, is a fatal ſymptom *. A diſcharge of black bile, ſimilar to black blood, taking place in perſons whoſe ſtrength is reduced by acute or chronic diſeaſes, by wounds, or otherwiſe, indicates that they will die next day †." Nevertheleſs, inſtances of perſons in ſuch circumſtances ſometimes recovering are recorded.

* Hippocr. aph. 12. ſect. iv. † *Id.* ſame ſect. aph. 23.

THE CURE.

68. THE cure of theſe affections ought to be directed firſt to removing the cauſe, and next to mitigating the ſymptoms. In lientery, at the beginning, gentle abſtergents, as whey; oil of olives; the watery tincture of rhubarb; a decoction of tamarinds: then gentle ſedatives, aſtringents, and ſtomachics, as theriac; the *diaſcordium Fracaſtorii;* terra lemnia and catechu; dragon's blood; bitters; the *vinum mali punici*, and quinces, are proper. Theſe are particularly proper if the diſeaſe be occaſioned, or kept up, by atony of the ſyſtem. Children frequently labour under

lientery, owing to their belly being obſtructed and ſwelled with a quantity of phlegm ſhutting up the mouths of the lacteals; in conſequence of which the body becomes emaciated, and all the ingeſta eſcape unchanged. They are cured by means of cathartics, reſolving remedies, and ſtomachics. Myrrh, the *ſal lixivioſum*, and *vinum aloeticum* given repeatedly in the courſe of the day, in a ſmall doſe, quickly reſtore the health *. Nor is any other treatment requiſite in the cœliac paſſion, providing aperients and diuretics be at the ſame time uſed. In diarrhœa, and ſtill more in dyſentery, at the beginning, before the ſtrength has been reduced, when the patient is of a good habit, and in his prime, if the fever or pains be urgent, it becomes even neceſſary to repeat the bleeding. When the veſſels are emptied, and no ſymptom of inflammation remains, nor any other diſeaſe contra-indicates it, if the matter abounds on the ſtomach, it muſt be evacuated by means of an emetic. Nor are there wanting inſtances of cures performed by emetics, even when no ſymptoms indicated that any thing remained in the *rimæ viæ* which by its ſtimulus could excite a diarrhœa. Van Swieten † cured ſuch obſtinate diarrhœas, by adminiſtering a vomit in the morning for two ſucceſſive days, afterwards repeating it every other day for three or four times, until they were checked; which aſtringents could not effect. In the evening, however, ſucceeding the operation of the emetic,

he adminiſtered an opiate. Sydenham ‡ and Pringle employed the ſame practice. Likewiſe, from half a grain to two grains of gum-tragacanth, along with the *confectio hyacinthina*, or *diaſcordium*, is given *per epicraſin* ‖. Ipecacuanha is particularly efficacious. The dyſenteries ſucceeding to bilious diarrhœas, which raged at Edinburgh in the year 1731, are ſaid to have been cured by repeated doſes of it, and by narcotics, rhubarb, and calomel, which ſometimes excited vomiting. Aſtringents, however, were hurtful, unleſs when cathartics § had been ſufficiently premiſed ¶. But in the epidemic dyſentery which prevailed at London in the year 1762, Sir George Baker contends, that ipecacuanha was an intirely uſeleſs remedy; nor did he aſcribe much to the opium and rhubarb, unleſs towards the end of the diſeaſe, preferring to the other emetics the *antimonium tartariſatum* **. In the year 1745, during the autumn, an epidemic dyſentery likewiſe prevailed in France, which, according to Du Hamel and Arnald ††, did not yield either to ipecacuanha, ſimarouba, or other remedies, but was ſucceſsfully treated by the *vitrum antimonii ceratum*. It is likewiſe warmly recommended by Sir John Pringle; but Heverman ‡‡ wonders at his having ſo frequently preſcribed it: for he is of opinion, that the *vitrum antimonii ceratum* ought to be conſidered as an unſafe remedy, on account of his having ſeen dyſenteries aggravated by the wax, which is always diſſolved by the fluids and

heat of the ſtomach. On the contrary, he recommends the bean of the *pechurim* of Braſil, as an anti-dyſenteric remedy, by means of which out of thirty he recovered twenty patients. Baeck had already made mention of this remedy ‖‖. After premiſing emetics and laxatives, he gave to the extent of two ſcruples of its powder twice a-day, and if the pains required it, he adminiſtered an opiate at night. After emetics, the principal rank is held by gentle laxatives, as tamarinds, myrobolans, rhubarb, oil, whey, &c. interpoſing, eſpecially at night, paregorics, of which I have already ſpoken. The herb *ſalicaria*, both in decoction and in powder, is recommended by an Engliſh phyſician of the name of Trelkeld §§, for the cure of dyſentery. Its efficacy was likewiſe aſcertained by De Haën, in the cure of diarrhœa and dyſentery, when the complaint ariſes from laxity. After premiſing a cathartic, one dram, or four ſcruples of the powder are given, morning and evening. Within three or four days the patients are cured,—providing abundance of ſordes, exceſſive putrefaction, ulceration of the inteſtines, or a taint of ſome of the viſcera be abſent,—but, in a ſomewhat longer time, if the complaint become more chronic. A diarrhœa of long ſtanding, which reſiſted all the remedies employed, was cured in this manner in the ſpace of three weeks ¶¶.

* Gorter, *De fame*, § 42. † § 722. Vid. *Ex pulſu per emetica*, &c. ‡ Sect. i. c. iv. ‖ Vid. Jurieu *in notis* Bremond.

§ It is neceſſary, however, to be cautious in the employment of jalap, which has ſometimes proved fatal to dyſenteric patients, or perſons recovering from dyſentery, as may be ſeen in *Collect. med. ſoc. Haunien.* vol. i. p. 234. See *Edinb. med. eſſays*, vol. i.

¶ *De dyſenteria et catarrho utriſq. epidem.* an. 1762. Lond. 1764.

** *Hiſt. de l'acad. roy. des ſcienc.* an. 1745. The method in which Arnald employed the *vitrum ceratum antimonii*, by which he affirms having cured fifty patients, was as follows: He prepared them with clyſters, and afterwards with a laxative: he next cauſed them to take ſix or eight grains of the ſame, with conſerve of roſes, every other day, adminiſtering an anodyne in the evening; and repeated the remedy three or four times. And he at length finiſhed the cure, when the pains remained, by means of a gentle opiate. †† *Com. de reb. in ſcient. nat. et. med. geſt.* vol. xv. p. 303. ‡‡ *Ibid.* vol. x. p. 198. and vol. xiv. p. 516. ||||| *Cap. de diarrhœa et dyſenter.* §§ *Gazzet. de Oltremonti*, n. viii. ¶¶ *Rat. med.* P. iii. c. v. p. 214. and P. iv. c. vii. See the method of cure of diarrhœas ſpoken of ſo repeatedly by the author, in the firſt and ſecond volumes. [*Germ. Edit.*].

69. It is likewiſe very advantageous to throw up frequent injections, at firſt of the abſtergent kind, next anodyne and ſedative, and, laſtly, balſamic and ſtrengthening. Such are thoſe which are compoſed of whey and barley-water, with honey of roſes; of the ſoup of calves feet or tripe; of milk, and the yolk of an egg; or of the yolk of an egg diſſolved in a little turpentine; or with the addition of theriac, diaſcordium, or the *philonium Romanum*; or a decoction of the root of comfrey, biſtort, or tormentil; and the like. Emollient and relaxing things muſt be applied to the belly; and, laſtly, thoſe things which ſtrengthen the ſtomach and inteſtines. Bliſters alſo have been very frequently found by Hamilton * exceedingly efficacious in the cure of a chronic diar-

rhœa, by directing the fomes of the diſeaſe elſewhere †.

* *De febr. miliar.* c. vii. † We read of chronic diarrhœas and dyſenteries, of ſeveral years ſtanding, having been cured in conſequence of the ſuppuration of wounds accidentally received by the patients labouring under them. Probably this happens in conſequence of the morbid virus, by which the dyſentery is kept up, being drawn out of the ſyſtem by ſuch ſuppuration. See *Journ. de med. de Par.* April, 1756, vol. iv. p. 369. Mention is likewiſe there made of a perſon having been freed from an habitual diarrhœa, in conſequence of a ſuppuration of the glands of the neck.

70. In the caſe of ſerous and putrid ſtools, if they be at the ſame conjoined with atony, aſtringents are the proper remedy. The bark of the ſimarouba, brought from America about the beginning of the eighteenth century *, is mentioned among theſe; and it is given, either reduced to a very fine powder, and infuſed in water †, or a watery decoction of it is employed ‡. Likewiſe the bark of the *conneſſus*, *pocgereba* ‖, caſcarilla §, peruvian bark, and tormentil-root, are employed with the ſame view. Lopez's root ¶ appears to Gaubius to be preferable to the ſimarouba **. Columbo root is at preſent held in great eſtimation ††. Unripe medlars, taken in great quantity, are celebrated by Van Swieten ‡‡; as the ſeeds are recommended by Valeriola and Foreſt. Fothergill deſcribes a new kind of aſtringent gum brought from Africa ‖‖; and recommends it as an excellent medicine in the cure of long-ſtanding diarrhœas, fluor albus, exceſſive alvine fluxes, and, in general, in the cure of laxity and acri-

mony of all kinds §§. With the ſame view are recommended, blood-ſtone, tincture of red roſes ¶¶, and corals, acids and opiates. In this manner lime-water, employed according to the method of Burletus ***, is conſidered as uſeful in dyſentery. A pound and a half of this water, with a third part of milk, drunk every day, has been known to alleviate a long-continued dyſentery, which was afterwards cured by three pounds taken daily, for the ſpace of three weeks †††. But Heverman, in a particular epidemy which prevailed among the ſoldiers at Copenhagen in the year 1757, at Rendzburg in the year 1759, and at Kellenuſa in the year 1761, employed it mixed with milk to no purpoſe; nor did any better ſucceſs attend the *cortex mangoſtanæ* and *cortex pocgerebæ* ‡‡‡. But if the dyſentery ariſe from acidity of the *primæ viæ*, as from ſour and unripe fruits; from acid wine and milk, and ſimilar cauſes; abſorbents ought then to be employed. Hence Hamilton ‖‖‖ ſo warmly recommends powder of mother-of-pearl, crabs eyes, and calcined hartſhorn; and Van Swieten the *terræ bolares* §§§. But if the acid proceed from exceſſive fermentation of the above-mentioned vegetables, mineral acids muſt be employed, which check the violence of the fermentation, and fix the evolved air. But when the diſeaſe is of a putrid nature, there is then more room for the employment of theſe acids, both to correct and eva-

cuate the putrid colluvies, and to gently ſtimulate and ſtrengthen the veſſels and inteſtines ¶¶¶. The drink ought to be, particularly, chalybeate waters; nor will the acidulous waters prepared with iron, which I have elſewhere mentioned, be of leſs ſervice. Likewiſe weak ſoups, prepared with citron or lemon juice; gum-arabic diſſolved in water ****; decoctions of barley, either in its crude ſtate, or gently toaſted; of rice, of the common millet ††††, of marſhmallow-root, or of ſaleb; in place of which may be ſubſtituted, the *orchis-root* of Linnæus, on account of its *gelatinous parts* ‡‡‡‡, that of graſs and ſaxifrage. Quarin ‖‖‖‖ informs us, that equal benefit may be derived from an infuſion of the dried flowers of wild poppy and elder.

* *Edin. med. eſſays*, vol. i. See alſo Barbeyrac, p. 101. † *Com. liter. Norimb.* p. 388. 389. an. 1732, from the work entitled *Voyag. du chev. des Marchais en Guinée.* &c. ‡ *Edin. med. eſſays*, l. c. and Barbeyrac, l. c.; beſides whom ought to be conſulted Degner (*De ſimaroub. diſſert.*). and the *Act. phyſ. med. N. C.* vol. v. in the *Append. Bremond. adnot. in tranſact. Anglic.* an. 1732, p. 158. et ſeqq.: as alſo the ingenious work of Lambſma, entitled, *Ventris fluxus multiplex*, &c. ‖ *Com. de reb. in ſcient. nat. et med. geſt.* p. 143. This bark, which is brought from America, acts like a ſpecific in the *hepatic flux*, in *diarrhœa*, and *dyſentery*. § Scardona, l. iii. p. 39. who mentions that it is excellently combined with alexipharmacs, as bezoardic remedies, tormentil-root, &c.

¶ It is the root of a particular tree, which grows indigenous at Goa and Malacca, and is employed by the Indians in alvine fluxes.

** *Adverſ. med.* p. 78. †† So early as the year 1686, Redi, writing to Kircher, claſſes the Colombo-root among the alexipharmac remedies; but is of opinion, that new experiments ought to be inſtituted to eſtabliſh its efficacy. Its name is derived from *Colombo*, a city of the Eaſt Indies. Percival (*Experiments and ob-*

ſervations on the Colombo-root), in conſequence of a variety of experiments which he had made, aſſures us that it produces wonderful effects, not only in the cure of *diarrhœa* and *dyſentery*, but alſo in that of *cholera morbus*, in morbid ſtates of the *bile*, and in pains of the inteſtines. Which is affirmed likewiſe by Johnſon. Before employing it, however, to allay *vomiting*, he uſed to premiſe ſome medicine calculated for evacuating the bile; after which he gave every third, or every quarter of an hour, two drams of the powder of this root. At the beginning of the diarrhœa, he ſays that it acted as an antiſpaſmodic, but that towards the end of the complaint it produced its good effects by its tonic, alexipharmac, and antiſeptic virtue. He likewiſe mentions, that fifteen or twenty grains of the powder, adding an equal or double doſe of vitriolated tartar, produced wonderful effects in bilious fevers, and turned out equally well in allaying vomiting in pregnancy. In a word, he affirms, that it corrects crudities of the ſtomach, and morbid conditions of the bile; that it ſtrengthens the ſtomach itſelf, improves the appetite, and removes nauſea and flatus. From the *Adverſaria* of the author, who likewiſe makes mention of this root in vol. ii. par. 495. 496. See alſo *Raccolta di opuſc. fiſic. med. de* Luigi Targioni, vol. v. ‡‡ § 722.

|||| It is a particular gum, hard, brittle, of a deep red, almoſt approaching to black, except the ſmaller fragments of it, which reſemble in colour and pellucidity the red amythiſt; it is named *gum-kino*. It is inodorous, and of an auſtere taſte, and excites in the mouth the ſenſation of mucus, as it were, and is ſoluble in ſix or ſeven times its weight of water. It differs, by its extreme fragibility, from *gum Senegal*, and by its ſtyptic taſte, and its property of diſſolving in water, from the *dragon's blood* of the ſhops.

§§ *Ibid.* ¶¶ Huxham, *De aer. et morb. epid.* vol. ii. p. 99. 105. *** *Mem. dell' accad. di Parig.* vol. ix. an. 1700. ††† *Edin. med. eſſays*, and *Com. Lips. de reb. in ſcient. nat. et med. geſt.* vol. ii. par. 1. p. 84. ‡‡‡ *Ibid. Com. Lips.* |||||| *De prax. regul.* c. iii. p. 26. §§§ Sect. 88. n. 5. ¶¶¶ Farr, *De acidor. virib.* p. 128. See likewiſe Lambſma, where he ſhews that the vitriolic acid, the uſe of which has been greatly recommended by Boerhaave in the dyſenteries of ſoldiers, is preferable to the other acids as an antiſeptic. See alſo the paragraphs quoted above, 33. 42. and 43. **** *Com. Lips.* vol. ii. p. 639. Wax alſo,

like gum-arabic, may be mixed with water. Let the wax be diſſolved in ſpirit of wine before the fire; afterwards let the ſpirit of wine be filtered. Let half a dram of this wax be mixed with a dram of the mucilage of gum-arabic, and let it be diſſolved in an ounce and an half of water. In like manner ſpermaceti, bruiſed down with the mucilage of gum-arabic, is mixed with water. Targioni, *Opuſc. ſiſic. med.* vol. v. p. 9. †††† Kramer, *Commerc. litt. Norimb.* ann. 1733, hebd. vi. § 3. See alſo the *Edin. med. eſſays*, vol. ii. p. 481. ‡‡‡‡ Quarin, *Method. med. feb.* an. 1772, p. 33. ‖‖‖‖‖‖‖ *Id. ib.*

71. The remedies which are calculated for the removal of dyſentery, are likewiſe beſt adapted to the cure of teneſmus. The chief of them are, injections of milk, and mucilaginous ſubſtances, to which may be conveniently added, diaſcordium or theriac *; fomentations of a decoction of the flowers of mullein, chamomile, elder, and of the heads of white poppy; liniments of freſh butter, or of the oil expreſſed from cacao; the vapours of vinegar poured upon a hot plate, and the like. The remaining remedies ought to be adapted to the variety and nature of the cauſes. Not a few of thoſe already mentioned (69. 70.) cure bloody fluxes, but eſpecially thoſe which I have elſewhere recommended, as being calculated for ſtopping hemorrhages †. Such are, plantain, tormentil, myrtle, roſes, quinces, corals, bloodſtone, and preparations of theſe, particularly Helvetius's tincture of corals, laudanum, tincture of roſes ‡, and the other aſtringents already mentioned in the preceding paragraph. But nothing is more efficacious than exhibiting the mineral acids internally and largely ‖. With reſpect to

the diet, it ought to be ſlight, and of a fluid, bland, gentle, demulcent, gelatinous, aceſcent, and not eaſily corruptible kind. It is neceſſary alſo, in a ſtate of convaleſcence, to abſtain from cathartics. I have already adduced an inſtance from the collection of the Medical Society of Copenhagen, vol. i. p. 234. of death having been occaſioned by jalap.

* Huxham, *De aer. et morb. epid.* vol. ii. p. 99. 105. † Huxham, l. c. ‡ Scardona, *De morb. mulier.* c. iii. § 15. || *De febr.* lib. iv. c. viii. § 29. and Farr, *Tentam. de acidor. virib.* p. 137. See alſo the paſſages quoted from vol. ii. where alſo the formulæ of the *ferum aluminoſum*, and of the ſpecific of Helvetius, are to be found. But when the foſſil acids are to be adminiſtered with caution, is pointed out chiefly by the author in par. 295. of Vol. I. following the opinion of Boiſſieu, mentioned in the note ſubjoined there.

CHAPTER VI.

CONCERNING PAIN OF THE STOMACH, OR GASTRODYNIA AND GASTRITIS.

72. BEFORE proceeding to the remaining diſeaſes of the inteſtines, we muſt return to the commencement of them, as it were, namely, the ſtomach, from which we have ſomewhat departed; for it, like other parts of the body endowed with ſenſation, is alſo liable to pain. If its left orifice, which is ſuppoſed to be more ſenſible, be affected with a ſmart pain, the complaint

is named *cardialgia*. It is very difficult, however, of ſo many parts lying under the epigaſtrium, to aſcertain which is principally affected; nor can the patients themſelves, for the moſt part, ſufficiently diſtinctly point out the ſeat of the pain: and it does not appear certain that the other parts of the ſtomach may not be endowed with exquiſite ſenſibility, and affected with the moſt acute pain. Whatever kind of pain, therefore, affects the ſtomach, and, by drawing the heart into conſent, occaſions fainting, it appears better to comprehend it under the name of *cardialgia*, in which reſpect we have the concurrence of Sauvages.

73. But if the pain either be not great, or not at all accompanied with fainting, in general it is named *gaſtrodynia*, or diſtinguiſhed by the generic name of *pain of the ſtomach*. If, however, it rather reſembles an uneaſy ſenſation of burning, it is likewiſe very properly named *ardor ventriculi*, or *ſoda*; although this laſt be generally confounded with acid crudity of the ſtomach, concerning which we have already treated (38. to 40.).

74. There is alſo another diſtreſſing and troubleſome ſenſation of the ſtomach, nearly allied to pain, or frequently even conjoined with it, which is named *anxiety*; namely, when the patients are affected in ſuch a manner, about the region of the ſtomach, that they cannot remain in one place, conſtantly ſhifting their poſture, and heaving deep ſighs. This ſpecies of anxiety, how-

ever, is not to be confounded with thoſe anxieties which ought to be aſcribed to faulty conditions of the præcordia, uterus, or ſyſtem of the *vena portarum;* as it ſeems rather to ariſe from an extenſive ſpaſm of the ſtomach alone.

75. The proximate cauſe of theſe affections is the ſame, namely, ſuch a change or derangement of the ſentient parts of the ſtomach, as excites in the *ſenſorium commune* the idea of a pain, ſometimes ſharp, ſometimes dull, or a ſenſe of anxiety. This ſenſation is occaſioned by whatever preſſes upon, diſtracts, lacerates, divides, punctures, or irritates theſe parts, as I have elſewhere pointed out (27. to 29.). Under this head come, acid, acrid, or corrupted humours, either ſecreted in the ſtomach, or flowing into it, or generated there; flatus; worms; the ſwallowing of improper and noxious things, or ſuch as are apt to corrupt; poiſons; emetics; powerful cathartics; violent anger; aromatic condiments; fermented liquors; cold water drunk when the body is warm; too great fulneſs of the ſtomach; an ulcer; a cancer, tumour, abſceſs, or ſpaſm, or congeſtion of the blood in its veſſels; metaſtaſes; bad kinds of fevers; and likewiſe diſeaſes of the pancreas and neighbouring parts, and eſpecially depreſſion of the enſiform cartilage, or its being luxated towards the inſide.

76. But the moſt frequent cauſe of that pain (27.) is inflammation of the ſtomach, which is

named *gaſtritis*. The cauſes from which it ariſes are ſuch as are in common to every kind of inflammation, and moſt of thoſe already mentioned (75.). When, therefore, it depends upon inflammation, a conſtant, violent, burning and throbbing pain affects the epigaſtrium, ſcrobiculus cordis, or left hypochondre,—eſpecially near the falſe ribs,—frequently ſtretching all the way to the back. The epigaſtric region is greatly ſwelled, and painful to the touch; while all theſe ſymptoms are conjoined with a very acute fever, and a hard contracted pulſe, ſometimes ſmall, ſometimes great and violent. The deglutition itſelf, ſometimes even the eructation, is checked; the patient is parched with thirſt and heat; the ingeſta are thrown off, with vomiting which can ſcarce be allayed; and the pain, in conſequence of theſe ſhocks, is rendered more intenſe. To theſe ſymptoms are added, on account of the conſent between the cardia and the heart itſelf, and its connection with the diaphragm and other parts, fainting; anxiety; frequent hiccup; difficult, frequent, ſhort reſpiration; the *facies Hippocratica*; convulſions; delirium; fetid breath; and other very alarming ſymptoms. But when the internal parts are affected with a violent ſenſation of burning, while the ſurface of the body feels cold,—which is ſaid to happen principally in violent eryſipelatous inflammation,—the fever is then diſtinguiſhed by ſome by the peculiar name of *lipyria*.

THE DIAGNOSIS.

77. THE ſymptoms peculiar to each kind of pain are eaſily diſcovered on examination. But every pain of the ſtomach does not commence and afflict the patient in the ſame manner. In ſome it is more acute, which is aſcribed by practitioners to the bile, or ſome acrid cauſe. In others the pain immediately ſucceeds to eating; and this may take place, either in conſequence of exceſſive ſenſibility of the ſtomach, or ſpaſm, or difficult deglutition, or from acrid fluids attracted too copiouſly to it, or from their being raiſed up to the cardia. In ſome it is aggravated while the food is digeſting, and particularly about ſix hours after meal-times; which indicates that the maſs of food is undergoing a morbid fermentation, rareſication, or corruption. At times the pain is felt during ſleep; which ſeems to ariſe from the remains of the food being corrupted or accumulated at that time, or from acrid, bilious, and acid fluids, flowing back from the duodenum into the ſtomach; or from the air being more copiouſly extricated in it, entering into, or ſhut up in it, and expanded by the heat. Sometimes the pain is oppreſſive, pointing out ſluggiſhneſs and thickneſs of the fluids; at other times it is accompanied with heat, and a taſte of acidity, as in the *ſoda*; at other times it is tenſive, as if occaſioned by flatus. At times it occaſions fainting, and then the cardia is ſuppoſed to be chiefly affected,

on account of the remarkable plexus of nerves with which it is provided, and the communication which they appear to have with the nerves of the heart. Occaſionally it is accompanied with a ſenſe of gnawing, and then it ariſes from ulceration, or worms, or with a ſenſe of twiſting and conſtriction, which is frequently propagated to the fauces, in which caſe it is occaſioned by convulſion. Sometimes the whole body is convulſed, the extremities become cold, and the head is affected with vertigo and pain: all of which effects are derived from the action and ſenſibility of the nerves. Laſtly, the pain of cardialgia is uſually diſtinguiſhed into *bilious*, *flatulent*, *convulſive*, *phlegmatic*, *inflammatory*, *idiopathic*, *ſympathetic*, *continual*, *periodical*, and ſo forth.

78. Nor is the pain always confined to the ſtomach alone; for it ſtretches from the epigaſtrium to the back, ſcapulæ, and œſophagus, or even deſcends downwards. Likewiſe the cardialgia may be readily taken for colic pain; or that colic pain which occupies the part of the colon lying under the ſtomach, may, on the other hand, be taken for cardialgia. But the diſtinction conſiſts in this, that in *cardialgia* the pain ſtretches to the thorax, while in *colic* it paſſes to the umbilicus and kidneys. But who, from a conſideration of the ſeat of the pain, can always depend upon aſcertaining the part affected? For the ſtomach has ſometimes been diſcovered on diſſection to be moved from its ſituation, or by its weight

forced down to the lower part of the belly. We are prevented from confounding gaſtritis with that ſpecies of hepatitis which affects the concave ſurface, or left lobe of the liver, by the ſeverity of the ſymptoms, and the deeper ſeated pain, which takes place in it. It differs alſo from inflammation of the recti muſcles, by all the ſymptoms in the latter being milder, and the pain being ſituate more externally. Gaſtritis is diſtinguiſhed likewiſe from both theſe affections, as alſo from inflammation of the diaphragm, by the remarkable pain which takes place in the former, when either food or medicines are taken into the ſtomach. Laſtly, other pains are eaſily diſtinguiſhed from it by the abſence of an acute fever, unleſs it happen to be conjoined with them in conſequence of inflammation ſupervening.

THE PROGNOSIS.

79. A ſlight and convulſive pain of the ſtomach is almoſt void of danger. But if it be of long ſtanding, or ſevere ſymptoms ſupervene, it is not without riſk. Cardialgia, when it is accompanied with a continued fever, and great pain about the ſtomach, or when it ſupervenes upon malignant fevers, both continued and intermitting, puts on the appearance of a very acute and dangerous diſeaſe. For it is either the effect of inflammation, which is always very dangerous, or threatens to paſs into it. Patients attacked with it ſometimes expire within twenty-four hours,

becauſe the inflammation generally terminates in gangrene and ſphacelus. That this has already taken place is indicated by the pulſe becoming ſmall, weak, and very quick, and, while the other ſymptoms do not abate, by the ceaſing of the pain, and very great anxiety ſucceeding to it.

THE CURE.

80. In attempting the cure of the complaint, it is neceſſary to remove the efficient cauſe of the pains (75. 76.), to allay the irritation, and, if any inflammation be preſent, or be apprehended, to reſolve, or prevent it. The cauſe, if it be inherent in the ſtomach or duodenum, but of ſuch a nature as to admit being removed, is overcome by vomiting or purging. Oil of ſweet almonds, or lint-ſeed, or olive oil, is beſt adapted, both to excite vomiting and to open the bowels, providing it be drunk copiouſly *. Injections alſo are very uſeful, and likewiſe fomentations of an emollient and relaxing kind, applied externally. If any acrimony occaſion the complaint, it ought to be corrected by watery, demulcent, and mucilaginous drink; if it be of an *alkaline* nature, *acids* are to be employed †; if of an *acid* kind, *bitters*, *alkaline* remedies, and *abſorbents*; if it be tenacious or viſcid, inciſive, attenuant remedies, and neutral ſalts; and if a *ſpaſm*, or *flatus*, occaſion the complaint, it ought to be allayed and diſcuſſed by opium, theriac, diaſcordium, the *philonium*

Romanum, caſtor, and carminatives. Chamomile is almoſt univerſally employed, from which a decoction, diſtilled oil, and water, are prepared. It proves emollient, diſcuſſes flatulency, allays ſpaſms, and proves gently ſtrengthening, without occaſioning irritation.

* I remember that I myſelf, not many years ago, was quickly freed from a ſevere *cardialgia* by five ounces of the oil of ſweet almonds, taken at a draught; after the pain had received no relief from laxatives, emollients, acidulous waters, veneſection, and other remedies, both internal and external. [*Germ. Editor.*]

† See Vol. I. p. 216. and elſewhere, where the author propoſes many remedies, celebrated by modern writers in the cure of cardialgia. See alſo Chap. III. of this volume, concerning *Morbid Digeſtion*. [*Germ. Editor*].

81. When plethora, or the ſuppreſſion of any evacuation, or an acute fever, or gaſtritis, accompanies cardialgia, blood muſt immediately be drawn, and repeated, from the arm, foot, or from the hemorrhoidal veins, as far as may appear neceſſary, or the ſtrength can bear. If the complaint be a ſymptom of intermitting fever *, the fever ought to be cured by the uſual remedies, particularly by the peruvian bark. Worms ought to be oppoſed by the anthelminthics enumerated in Chap. X. which follows. The replacing of the enſiform cartilage, when luxated, may be attempted by the application of a dry cupping-glaſs. The cure of the other cauſes is to be taken each from its proper place. The food ought to be very ſlight, bland, and fluid. Laſtly, by way of prophylaxis, whey, milk, medica-

ted waters, the bath, deobſtruents, diaphoretic decoctions, ſweeteners, and principally chalybeates, may be employed.

* It is likewiſe a ſymptom of other fevers and diſeaſes. See par. 11. Vol. I. and likewiſe par. 216.

CHAPTER VII.

CONCERNING PAINS OF THE INTESTINES, AND OTHER PARTS OF THE ABDOMEN.

82. PAIN of the inteſtines (for they alſo are very frequently liable to be affected with pain) is uſually divided into *colic* and *iliac* pain, or into that which affects the *colon*, and that which affects the *ilium*. For the inteſtines were divided by the ancients into theſe two parts only. It is an opinion univerſally prevalent, that both pains are diſtinguiſhed not only by the diverſity and ſeat of the pain, but alſo by its intenſity. For moſt phyſicians affirm, that the colic pain follows the courſe of the colon, and that the iliac pain occupies the region of the ilium; and, moreover, that the iliac is more ſevere than the colic pain, becauſe the ſmall inteſtines appear to be more copiouſly provided with nerves, and therefore to be endowed with greater ſenſibility than the large inteſtines. They likewiſe add, that in the colic pain, vomiting is not preſent, or at leaſt that it is more diſtreſſing, and more conſtantly preſent in the iliac pain.

* Pliny the younger (lib. xxvi. c. i. *Hiſt. natur.*) writes, that the *colon*, or *colic* pain, is a new diſeaſe, and that it appeared during the reign of Tiberius Cæſar, who was firſt of all attacked with it. Sennert (*Med. pract.* l. iii. P. ii. ſect. ii. c. ii. quæſt. 1.), and after him Tronchinius (*De colic. picton.* c. i.) accuſes the paſſage of Pliny as being falſe, and ſhews that Caſſius, the contemporary of Celſus and Themiſon, who flouriſhed under Auguſtus, and Philo of Tarſus, who lived at the ſame time with Themiſon, ſpoke of the colic pain. Probably, however, Pliny might be excuſed, or pardoned, if it were to be underſtood that he wrote concerning a particular ſpecies of colic pain, which then firſt appeared to rage epidemically: and this opinion appears more probable, as I will ſhew hereafter.

83. It is to be obſerved, however, that no certain concluſion can be drawn merely from the ſeat which the inteſtines naturally occupy; as anatomical diſſection has more than once demonſtrated, that the poſition of all the inteſtines, eſpecially that of the *colon*, varies in different ways. For ſometimes the *colon*, from its very beginning, has been found to occupy a wrong ſituation; ſometimes it is forced downwards by the ſtomach, liver, and ſpleen, being unuſually enlarged; ſometimes being filled and diſtended with fæces, it is depreſſed almoſt by its own weight towards the hypogaſtrium; or, on the other hand, being expanded with flatus, or air, and rendered tympanitic, it is raiſed up, occupying a higher ſituation: on which account it is ſometimes found about the umbilicus, ſometimes thruſt lower down, with various ſingular contortions, ſometimes forcibly elevated towards the falſe ribs *. But nothing is more apt to derange, or more fre-

quently deranges, the ſeat of the colon, and forces it to the middle of the abdomen, than the abſurd practice of binding the ſides, and ſmall of the back, which women attempt by ſtays, that they may appear more ſlender and neat in the waiſt, as is very frequently diſcovered on diſſection.

* Morgagni (*Epiſt. anat. med.* xxxiv. n. 2. 3.), Bonetus (*Sepulchret. anat. ſcol. ad obſerv.* 41.), and Lieutaud (*Hiſt. anat. med.* lib. i. art. xxvii.), who, from Ballonius, quotes an inſtance of the colon having been obſerved to be protruded through a hole in the diaphragm, into the cavity of the thorax; and another from the *Miſcel. nat. curioſ.* in which the part of the colon next the ſtomach is ſaid to have adhered above the diaphragm.

84. Likewiſe the ſmall inteſtines are ſometimes forced from their natural ſituation, towards different parts. This happens eſpecially in conſequence of gravid uterus; aſcites; encyſted dropſy; herniæ; from tumours of the meſentery, omentum, ovaria, of the uterus and its tubes, and other parts of the abdomen; in conſequence of increaſed bulk of the liver, pancreas, ſpleen, or kidneys; and from the ſtomach being enormouſly dilated, and falling down; from all of which, the inteſtines alſo, eſpecially the ſmall inteſtines, being forced into various parts, change their ſituation. For they are mentioned by Morgagni as having been drawn up, and uniting together, and likewiſe forced down to the bottom of the abdomen *. The ſame author likewiſe mentions the ſymptoms by which this can be diſcovered when it happens †. Bartholin ‡ has ſeen all of the inteſtines accumulated in the right

hypochondre; and Laub has obſerved them collected at the umbilicus ‖, while Columbus has obſerved them gathered at the hypochondria §.

* *Epiſt. anat. med.* xxxix. art. 28. to 30.

† Morgagni has the following obſervations: "In a body which is neither corpulent, nor much emaciated, nor hydropic, and which does not labour under the ſuſpicion of dilatation of the *aorta deſcendens*, or of increaſed pulſation of it there from other cauſes, if the pulſation be natural, and, much more ſtill, if the hardneſs which the vertebræ exhibit, be perceived; it may be conjectured that the inteſtines are drawn up; and our ſuſpicion will receive no ſmall confirmation, if the abdomen, below the umbilicus, appear to be too much flattened, while above it it is unuſually hard. But if, along with theſe ſymptoms in the ſuperior region, a peculiar and moveable ſwelling appear, we muſt not only take care not to haſtily refer it, on account of its reſiſtance, and the inequality of its ſurface, to ſcirrhi, or ſtrumous tumours, but likewiſe we muſt inquire by what farther ſymptoms we may be induced to conjecture that it is occaſioned by the inteſtines. Theſe ſymptoms will be, if we underſtand that the patient has been often liable to pains of the ſmall inteſtines, and to a diſcharge of blood from the hemorrhoidal veins,—although it may have afterwards been diminiſhed or ſuppreſſed;—if the tumour be accompanied with pain, and troubleſome flatulency; if the belly become more and more bound after the firſt appearance of the tumours; and ſimilar ſymptoms, which are either related in the hiſtory adduced by us, or which may be ſuggeſted by the peruſal of it. Theſe particular ſymptoms would be, if the tumour were felt by the patient ſometimes more ſevere or ſlight, and by the phyſician harder or greater, or ſofter and ſmaller, as takes place in herniæ of the inteſtines. And altho' this appears to happen rarely in this ſwelling, on account of the very frequent fluxes, the conſiderable conſtriction, and eſpecially the very cloſe adheſion of the inteſtines to one another, obſtructing the free periſtaltic motion of them;—which cauſes retain the matter, in conſequence of which, as we have ſeen, the reſiſtance is occaſioned:—ſtill it is probable, that if ſuch an inquiry were repeated carefully, frequently, and at different times, eſpecially after nothing for a conſiderable time having been paſſed, or when an unuſual quantity is diſcharged, or when the patient is more

or leſs troubled with flatulency;—it is probable, I ſay, that ſome of theſe ſymptoms might in ſome meaſure be diſcovered."

‡ Cent. i. *Hiſt. anat.* ii. || *Ephem. N. C.* cent. 9. obſ. 64.

§ *De re anat.* l. xv. Whoever wiſhes for farther information concerning diſplacements of the colon, and other inteſtines and viſcera, from their natural ſituation, may conſult De Haen's *Rat. med.* P. x. c. i. tab. 1. to 4. and P. xi. c. iii. iv. tab. 1. to 4.

85. Nor does the ſeverity of the pain argue that it is a colic one, as, ſince the time of Galen to the preſent day, it has been aſcertained by medical hiſtories, that ſometimes colic, ſometimes iliac pains, are attended with ſuch ſeverity, that neither of them can be ſaid to ſurpaſs the other. Nor is it altogether true, that when the colon is affected, vomiting is always abſent, or leſs conſtantly preſent, and not ſo ſevere as in the iliac pain; for frequently I have obſerved very violent and conſtant vomiting excited in people endowed with much ſenſibility, in conſequence of a colic pain, particularly when that part of the colon which lies tranſverſely under the ſtomach is affected. Since, therefore, neither the part affected with the pain, nor the degree of it, nor the preſence or abſence of vomiting, of themſelves certainly point out the part affected; and as ſeveral other parts contiguous to the inteſtines, or lying between and below them, are contained in the abdomen, on account of which the difficulty of the diagnoſis is increaſed, we muſt not truſt to one or two ſymptoms, but all muſt be maturely weighed; and, from the concourſe of ſeveral of them, we may conjecture whether one

part be affected more than another, as will be exemplified afterwards. To avoid theſe difficulties, phyſicians comprehend every pain of the abdomen or inteſtines, providing it be violent and ſevere,—for ſlighter pains are named *tormina*,—under the generic name of *colic*, and according to the variety of the cauſes from which it proceeds, they eſtabliſh a good many varieties, each of which are to be diſtinguiſhed by its peculiar marks, as will appear in the ſequel.

86. With reſpect to the cauſes, it is obvious that theſe muſt not be diſſimilar to ſuch as I have enumerated in par. 75. and that, according to the diverſity of them, a pain, ſometimes greater, ſometimes leſs, and of different nature, is excited. The chief of theſe are, flatus; vitiated, or abundant bile; various kinds of phlegm, namely,—to ſpeak in the language, and according to the doctrine of the ancients,—*vitreous*, *viſcid*, acid, and *ſalt*; indurated or accumulated fæces ſticking any where; ſtony concretions growing to the inteſtines; hard, ſharp bodies, as coins, needles, bones, cherry-ſtones, thoſe of prunes and other fruits, and ſimilar things ſwallowed and not paſſed by ſtool, but remaining in ſome of the convolutions of the inteſtines, or fixed ſomewhere, or obſtructing the paſſage; various kinds of worms, as tæniæ; ſpaſm; convulſions; congeſtions of blood; ſuppreſſion of the hemorrhoidal flux; ſwellings of the inteſtines, ſcirrhus, cancer, ul-

cers, conglomerations *, and other morbid conditions of them or the neighbouring viſcera; the the matter of gout, rheumatiſm, herpes, ſcurvy, and ſcabies, being repelled; the perſpirable matter being retained, and paſſing to the inteſtines; pus poured into the cavity of the abdomen, and proving hurtful to the inteſtines by its acrimony; bile in like manner diſcharged ſuddenly, in conſequence of the gall-bladder burſting, and irritating the inteſtines externally; fevers, both of the intermitting and continued kind, being imperfectly reſolved, or their fomes proving particularly injurious to the abdominal viſcera; the catching of cold; the imprudent expoſure of the feet to cold; aliment which is of itſelf hurtful, or not well digeſted; the drinking of fermenting ſubſtances, as of new wine, of beer which is not purified, and the like; the eating of particular kinds of muſhrooms; retention of the meconium, or the milk becoming acid or coagulated in infants; and, laſtly, *enteritis* itſelf, or inflammation of the bowels, which is by ſome named *chordapſus*, *iliac-paſſion*, or *ileus* †.

* Beſides the conglomerations of the inteſtines, which I have already pointed out (84.), that one which is deſcribed by Columbus, and which aroſe in conſequence of the laſt convolutions of the ilium being entwined together, and forming a tumour in the hypogaſtrium, is deſerving of notice. I myſelf have ſeen a ſimilar kind of tumour in a woman who had been long afflicted with a chronic colic, and was at length cut off in conſequence of a maraſmus induced by it. Morgagni (*Epiſt. anat. med.* xxxix. n. 29. 30.) alſo adduces an inſtance of a ſimilar tumour, which aroſe after aſcites,

likewiſe in the lower part of the abdomen, in conſequence of the inteſtines being entwined together, and having acquired almoſt a cartilaginous hardneſs. In the ſame epiſtle a deſcription is given of a hard and circumſcribed ſwelling in the lower part of the epigaſtrium, which was occaſioned intirely by the retraction and conglomeration of the ſmall inteſtines. Likewiſe inſtances of the inteſtines, together with the meſentery, being convoluted together, as it were, into a ball, and adhering very firmly, may be read in the *Act. acad. N. C.* vol. i. obſ. 87. and vol. vi. obſ. 124. Fantoni, *Obſerv.* epiſt. 4. Bonetus, ſect. 21. obſ. 3. § 8. To which I myſelf might add not a few other inſtances. [*Germ. Editor.*]

† Hippocrates himſelf appears to have employed the word *ileus* in this very ſenſe, when he obſerves: "Vomiting, or hiccup, or convulſions, or delirium, proceeding from *ileus*, are bad;" aph. 10. ſect. 7. For by the word *ileus* had he underſtood, not enteritis, but *volvulus*, as it is called, he could not have mentioned vomiting as a bad ſymptom, as volvulus, in its nature, takes in vomiting; nor can it exiſt without it. But it appears more clearly that Hippocrates ſpoke concerning inflammation, or enteritis, in the book *De effect.* xxii. § 5. where theſe words occur: "When ileus attacks a perſon, the belly becomes hard, and paſſes nothing; and all the lower parts of the bowels are affected with pain, and fever and thirſt are preſent; ſometimes, however, on account of the pain, likewiſe a vomiting of bile takes place." But in volvulus the excrements, not bile, are thrown off by vomiting. [*Germ. Editor*].

87. Hence flow the varieties of colics which are moſt frequently mentioned by phyſicians, namely, the *colica*, *flatulenta*, *bilioſa*, *pituitoſa*, *ſtercoralis*, *calculoſa*, *verminoſa*, *ſpaſtica*, *and convulſiva*, *ſanguinea*, *hæmorrhoidalis*, *catamenialis*, *arthritica*, *ſcorbutica*, *metaſtatica*, *accidentalis*, from ſubſtances ſwallowed, or from cold, *inflammatoria*, and ſo forth. Beſides theſe varieties, however, which the more evident cauſes of the diſeaſe occaſion,

there are others which may be reckoned in common, as the primary, ſecondary, ſymptomatic, periodical, chronic, endemic, epidemic, &c. The periodical ſpecies frequently originate from the fomes of intermitting fevers, and generally ſupervene as a ſymptom upon the acceſſions. The chronic ſpecies * is for the moſt part occaſioned by organic injuries, which prove obſtinate and hard to remove, ſuch as have been already mentioned in par. 84. and 86.; as the endemic and epidemic ſpecies are occaſioned by certain common cauſes which are more or leſs diffuſed.

* Hoffman obſerves: "Beſides pains of the inteſtines, which are of an acute kind, and terminate in health or death in a ſhort time, others likewiſe occur, which are of a chronic kind, continuing for a greater length of time, and diſtreſſing the patient for many weeks, or even for a twelvemonth; although at intervals they have their remiſſions and exacerbations. After death the cauſe of theſe has been diſcovered to conſiſt in the narrowneſs, conſtriction, ſcirrhus, or callus, of ſome part of the inteſtines," &c. Sect. ii. c. v. p. 180. *De inteſtin. dolor.* Holler (lib. i. c. xli. *De morb. intern.*) and Rhodius (cent. ii. obſ. 75.) deſcribe a ſcirrhus of the colon. Likewiſe Beniveni (lib. v. *De abdit. rerum cauſ.* c. xxx. & xxxiv.) has obſerved a colic occaſioned by a callus in the inteſtines. Hildanus alſo, in the body of a man who for ſome years had laboured under a conſtant fixed pain below the region of the liver, and had at length died of a moſt dreadful iliac paſſion, diſcovered a ſcirrhus already in a ſtate of ulceration at the bottom of the cœcum. See Van Swieten, § 486. Riverius, *Prax. med.* l. x. c. i. *De dolor. colic.* and Roncall, *Hiſt. morb.* p. 172.

88. The common cauſes either affect numbers at the ſame time, or only certain diſtricts, or particular artizans or families. Citeſius believed that unripe acid wine was the cauſe of

the very ſevere colic with which he obſerved the inhabitants of Poictiers and neighbouring diſtricts epidemically affected *. A ſimilar colic is referred by Piſo, Sennert, Crato, Cardanus, Wepfer, and others, to white wine not ſufficiently purified. Tronchini aſſerts †, that immoderate drinking of punch may occaſion ſuch colics; and, on the ſame account, ſuſpected the bad effects of lemon-juice and vitriolic acid, when employed too abundantly. The inhabitants of Japan, as we are informed by Kaempfer, are likewiſe liable to a ſimilar colic, on account of drinking a ſpecies of beer, probably of an acid kind ‡. Putrid waters abounding with animalcula, ſuch as the Laplanders drink, are conſidered by Linnæus as the common cauſe of the colic with which they are affected. Huxham is of opinion that the Devonſhire colic is to be aſcribed to the drinking of cyder, which is ſo prevalent there. But Sir George Baker ‖ is rather diſpoſed to derive it from drinking cyder ſweetened by the admixture of lead. In fact, nothing contributes more to induce ſuch colics, and of the moſt ſevere kind, than wines ſweetened with lead, or litharge; as alſo medicines prepared with lead, employed both internally § and externally; as alſo the fumes or powder of lead taken in with the breath, or ſwallowed; coſmetics prepared with it; and, laſtly, meat boiled in leaden veſſels, or long kept in them. Some alſo enumerate,

among the cauſes of this colic, the fumes of arſenic and of antimony not properly purified, or the internal employment of native cinnabar without ablution, and verdigris communicated to the food from copper veſſels. Such perſons, however, are completely refuted by Stockhauſen, in his excellent work, who contends, that the colics which are generally named *metallic* ariſe from lead alone, and therefore names them *ſaturninæ*, to diſtinguiſh them from the other ſpecies of the complaint ¶. The colic which by others is named *metallica*, or *ſaturnina*, by Ramazzini is called *colica lumbariorum*, by Dubois *figulina*, as alſo *colica pictorum*, becauſe the perſons moſt liable to it are miners, thoſe who work among metals, eſpecially ſuch as handle lead, or thoſe who glaze earthen veſſels, or diſſolve and grind various kinds of pigments, or who inhale the fine duſt ariſing from them, as potters and painters. But beſides the ſpecies of colic already enumerated, it is to be obſerved, that in our times the name of *colic* is extended to other parts of the abdomen alſo: and therefore, that practitioners frequently make mention of the *colica ſtomachica*, *pancreatica*, *meſenterica*, *hyſterica*, *nephritica*, and *hepatica*, or, as others would rather have it, *hepatalgia*.

* *De novo et popul. apud. picton. dolor. col. bil. diatrib.* Par. 1639.

† *De colic. picton.* Genev. 1757. † *Amœnitat.* iii. n. 2.

‖ *Lond. med. tranſ.* vol. i. p. 175. § *Traite des mauvais effets de la fume, de la litharge traduit du Latin, et commente par* M. J. J. Gardane, Par. 1776.

¶ An inſtance of this cauſe is adduced by Fernelius, in the following hiſtory (*De lue venerea*, c. vii.). "A friend of mine was ſubject to a diſtillation from the head, ſometimes proceeding to the neck and ſhoulder-blades, ſometimes to the joints of the feet; on which ſupervening, however, he uſed to be deprived of the proper evacuations. After he had been freed from his pains by my treatment, an empyric recommended the powder of lead as an antidote againſt gout, ſo warmly, as at once to perſuade him that the prevention of its recurrence depended intirely upon that remedy. Having recourſe to this powder, therefore, in fifteen days he conſumed a pound and a half of it, taken in broth, or wine, or along with roaſted pears, and other things, in place of ſugar. But, upon the twelfth day, a terrible dyſentery, accompanied with fever, aroſe, and was attended with the moſt dreadful gripes, not only of the belly, but alſo with cramps of the ſtomach reaching to the ſpine of the back. So great a relaxation of the ſtomach, and injury of its mouth followed, that it could not bear the ſlighteſt touch: and whatever was taken in, either contracting a leaden ſmell, or rancidity, was ſhortly after thrown up. In conſequence of this, ſo great a quantity of flatus was emitted, that every thing ſwallowed ſeemed to be converted into wind. When the dyſentery was allayed, the excruciating pains of the belly, loins, and ſtomach, continued twenty days, accompanied with a moſt diſtreſſing ſenſation of heat internally, and he paſſed the like number of nights without ſleep. During this time, although he was not very thirſty, his appetite was intirely gone; nor was any thing paſſed by the belly, unleſs when it was excited by a clyſter or cathartic. And every thing diſcharged, either by ſtool or by the mouth, whether ſpontaneouſly or by art, was tinged with a leaden colour, ſo much had it imparted that quality to the internal parts. An icterus in the mean time having ariſen, the appearance of the whole body was changed; and the blood, which, after the dyſentery had been allayed, was drawn to cure the fever, was found to be wholly yellow, bilious, and frothy."

Tiſſot likewiſe adduces inſtances of the moſt dreadful colics having been occaſioned by ſugar of lead, and the *tinctura antiphthiſica* of Garmann. *De colic. ſaturnin.*

THE DIAGNOSIS.

89. It now remains for me to mention in what manner the particular ſpecies of colic are diſtinguiſhed. And although I have already obſerved, that no certain concluſion concerning the part affected can be drawn from the ſeat of the pain, on account of the frequent diſplacement of the parts from their natural ſituation, ſtill, if they be contained in their place, no ſmall light is obtained from the anatomical knowledge of the part in which the pain is fixed. When the pain, therefore, is ſituate in the umbilical region, it will appear to ariſe from the *jejunum* and *ilium* being chiefly affected, or from a morbid ſtate of the meſentery itſelf. That pain, again, which is chiefly ſevere in the back and loins, towards the right ſide, is ſuppoſed principally to affect the *duodenum*, or beginning of the *jejunum*, as the termination of the duodenum reſts upon the lumbar region. In that caſe, however, it in ſome meaſure reſembles *cardialgia*, or *hepatic*, or *nephritic* colic, from which, however, it ought to be diſtinguiſhed by the marks laid down elſewhere (77. 78.). But if the pain affect the colon, it riſes up from the right thigh to the right hypochondre, from thence paſſing acroſs under the falſe ribs, to the left hypochondre; and, laſtly, bending down where the colon terminates in the rectum. Very frequently the pain is perceived in the left hypochondre, under the falſe ribs, and is then generally aſcribed to the ſpleen. But, in place of the ſpleen,

generally the inteſtines are affected there, namely, in thoſe parts in which they are variouſly inflected and convoluted. And this pain is generally very troubleſome to hypochondriacal men, and hyſterical women. For if phlegm, or fluggiſh mucus, or flatus, or fæces, or any ſimilar cauſe, adhere in the windings of the jejunum and colon, where they are directed to the left hypochondre *, a fixed pain may be excited in that hypochondre, which would be more profound when the jejunum is affected, and leſs when the colon is the ſeat. The ſame thing happens alſo, not far from the right thigh, if, as not unfrequently happens, the ſame cauſes adhere about the extremity of the ilium, and beginning of the colon; in which part a hard and circumſcribed tumour frequently then betrays itſelf, until the cauſe from which the pain proceeds be diſcuſſed.

* Hoffman, *De inteſtin. dolor.* ſect. ii. c. v. p. 178.

90. So much concerning the marks pointing out the part affected. I ſhall now make a few obſervations concerning the ſymptoms by means of which we aſcertain the peculiar cauſes of each colic, or their varieties. And, firſt, the flatulent colic is indicated likewiſe by a fixed pain, or, as more frequently happens, by a ſhifting one; by a tenſive and tympanitic ſwelling of the belly, by borborygmi, and ſometimes by difficult inſpiration: all of which ſymptoms are allayed upon wind being paſſed by the mouth or anus. Sometimes in this ſpecies the belly becomes ſo tenſe,

that the umbilicus protuberates prodigiouſly, and runs into *hernia umbilicalis*, or *omphalocele*. Frequently the upper part of the colon is occupied by the flatus; in which caſe, in conſequence of the neighbourhood of the ſtomach and liver, it becomes very difficult to ſay what part is affected, or from what cauſe. It ſeldom happens that a collection of air merely diſtending the inteſtines occaſions the diſeaſe, but frequently the inteſtines being conſtricted, in conſequence of ſpaſm, ſhut up air in ſome of their convolutions, which, being expanded by the heat, overcomes the reſiſtance of the coats, frequently diſtending them to a prodigious degree, as is rendered manifeſt externally to the feeling.

91. A ſenſe of weight is ſaid to denote, that the colic depends upon phlegm and viſcid mucus, but not at all acrid; that of a fixed and pungent pain, that the complaint depends upon an acid or ſalt phlegm, or ſome other irritating humour; very ſevere tormina, for the moſt part ſhifting, ſeldom fixed, with the ſenſation of a ball riſing to the fauces, accompanied with thin, watery urine, frequently voided, together with trembling, horripilatio, and yawning, denote the *ſpaſmodic* and *convulſive* *, or *hyſterical* and *hypochondriacal* colic; laſtly, a ſenſation of gnawing, returning at intervals, and accompanied with a great variety of ſymptoms, is ſaid to denote the preſence of the *colica verminoſa*. The ſpecies named *ſanguinea*, *hæmorrhoidalis*, or *catamenialis*, may be ſuſpected

to be preſent, firſt, from the abſence of the other cauſes; and, next, from the default of cuſtomary evacuations, whether of the menſtrual or hemorrhoidal flux; or, laſtly, from the periodical flow of them being threatened, and ſometimes from ſome febrile motion, which is generally excited in them. That it is the ſpecies named *ſtercoralis*, will appear, if the belly have been bound for ſome days, if a ſenſe of weight and fulneſs be felt in it, and if ſome error with reſpect to the quantity or quality of the food have been committed. Hence alſo, and eſpecially on an examination of what the patient may have been previouſly doing, or what he may have ſwallowed, the diagnoſis of the *accidental colic*, from ingeſta, from cold, and other evident and ſlight cauſes, will eaſily be obtained. The *inflammatory colic*, and *enteritis*, betray themſelves by an acute pain, which does not admit of the touch, or returns on any ſlight preſſure, and, by the ſwelling of the part, by the heat, pulſation, and fever accompanying it, which is ſometimes greater, ſometimes leſs. It is here to be remarked, that inflammation of the inteſtines, which quickly terminates in a fatal gangrene, ſometimes ſecretly and unexpectedly ſupervenes on colic pains, while no ſymptoms of fever, or ſuch as are very ſlight, are diſcoverable in the pulſe. Anatomical diſſection has repeatedly ſhewn this. Nay, from the obſervations of Morgagni, Valſalva, Riverius, Simpſon, and De Haën, it appears that inflammations of

the inteſtines, in the ſame manner as thoſe of other parts, occur not only without any fever, but even without any pain, probably in conſequence of the feeling of the nerves being loſt, or paralyſis of them having come on. But when theſe ſymptoms are wanting, Morgagni, after the example of Albertini, thus points out the method of detecting them: "A low, and rather weak pulſe, which, if attention be paid to it, is found to be ſomewhat variable, tenſion and hardneſs of the abdomen, with ſome pain, and, laſtly, the face exhibiting an unuſual appearance, different upon different occaſions, ſo that I have ſometimes obſerved the eyes terrified, as it were, and, at other times, a kind of livid colour about the lips: ſuch are the ſymptoms—for ſometimes he obſerved the tongue alſo unhealthy, and ſome degree of thirſt—which have generally offered themſelves to me in ſuch caſes †." But De Haën had a patient in whom the tenſion, pain, and obſtruction of the belly, were abſent ‡.

* Lorry deſcribes a colic *ſimply convulſive*, the peculiar ſymptom of which was, an inexpreſſible kind of anxiety. On diſſecting the body, he found the inteſtines, but eſpecially the colon, very much conſtricted; and the ſtomach divided into two cavities, on account of a conſtriction, which had ariſen in the middle of it. *Hiſt. de la ſoc. roy. de med.* vol. ii. p. 195. et ſeqq.

† *Epiſt. anat. med.* xxxv. n. 21. ‡ *Rat. med.* p. 14. ſect. i. c. iii.

92. In the *bilious colic* there is a moſt diſtreſſing pain, at firſt generally ſhifting, but which afterwards is nearly confined to a ſpot, and appears, as it were, to bore through the inteſtines,

or to bind them with a bandage. It is attended with a bitter taſte in the mouth, great thirſt, ſometimes hoarſeneſs, or even *aphonia*, burning heat internally, tenſion of the abdomen, vomiting, or bilious ſtools, and not unfrequently with acute and raging fever. But ſometimes the vomiting and looſeneſs is ſo great, that it readily paſſes into *cholera*, or the *iliac paſſion*, or *ileus*, properly ſo called. The laſt happens principally when, as the diſeaſe advances, the pain is confined nearly to one ſpot, and the belly is almoſt intirely ſhut. It is alſo peculiar to the bilious colic, that it occaſionally remits, or even for a few hours altogether ceaſes, but afterwards returns with greater violence than ever; which change, when it is about to take place, is generally foretold by the complaining and ſorrowful countenance of the patient. Some have ſuppoſed that this colic is one and the ſame with the inflammatory ſpecies, but improperly. This, however, is certain, that it frequently paſſes into enteritis.

93. But it neceſſarily happens in every colic, when the nerves and fibres are twitched with a ſomewhat ſharp pain, that ſpaſms and convulſions muſt be excited, or readily ſupervene on the complaint. But if the ſpaſms and affections of the nervous ſyſtem be remarkable; if the umbilicus and abdominal muſcles be, as it were, drawn in; if the pains appear to be deeper ſeated, and to ſtretch to the loins, from whence the ſpinal nerves come out; if the head be affected with

vertigo or excruciating pain; if epilepſy, alſo, or paralyſis of the feet or hands, or of both, come on, or if the pain terminate in it *, and the belly be ſo bound as ſcarcely to admit a clyſter-pipe: —it is then generally named the *ſpaſmodic* and *convulſive* †, or *nervous* colic ‡. I obſerve that it is likewiſe named *colica pictonum*, on account of being ſuppoſed to be particularly hoſtile to the inhabitants of Poictiers; but it is neither peculiar to them ‖, nor does that one which was obſerved by Cteſius § to prevail epidemically or endemically among them, comprehend all the ſpaſmodic colics, but is rather to be conſidered as being a particular ſpecies of them. Others, who have been of opinion, that in it the meſenteric plexus §, and the meſentery itſelf, are chiefly affected, likewiſe, and not improperly, give it the name of *meſenteric colic* ¶. Some alſo have ſuppoſed that it is to be derived from the ſpinal marrow being primarily affected, while the inteſtines and meſentery remain uninjured, and have diſtinguiſhed it by the peculiar and new name of *rachialgia* **, excluding it altogether from the nature of colic ††.

* Tiſſot (*Epiſt. var. arg.* p. 152.) obſerves: "Concerning the cauſes of colics which induce paralyſis, authors are not agreed. I am diſpoſed to believe, however, that certain *wines*, *poiſons*, and *ſcurvy*, are the only cauſes of them. The moſt ſevere colics from other cauſes are not followed by paralyſis. This opinion, however, I propoſe with deference."

† Hoffman, *Med. rat. ſyſt.* vol. iv. ſect. 2. c. v. § 9. Vogel, *De cog. et cur. morb.* cl. iii. *dol. colic.* § 442. ‡ Town. *upon Allen's ſynopſis*, P. ii. c. iv. p. 156. Buchan's *Domeſt. med.*

‖ For the Caribbee Iſlands, Barbadoes, Hungary, Franconia, Moravia, Auſtria, and other countries, are likewiſe liable to it.

§ Citeſius, *Diatrib. de nov. et popul. apud pictones dol. colic. bilioſ.* Par. 1639. A good many writers have given their teſtimony, that this colic has ſometimes appeared as an epidemic. It appears from Lange *(Epiſtola de torminibus ventris a febre relictis)*, that it raged in Moravia and Sileſia in the ſixteenth century; as alſo from the works of Crato, an. 1582, *De paralyſi et colica.* But, above all, a paſſage of Paulus Ægineta deſerves notice (lib. iii. c. 43. towards the end), which is as follows: "I am of opinion, however, *that the bowel-complaint, which ſtill prevails*, proceeded from ſuch humours as that did *which begun in the ſtates of Italy*, and *raged in many other parts of the Roman republic like a peſtilence*; in conſequence of which moſt patients were attacked with epilepſy, ſome with loſs of power of the joints, while ſenſation remained, and others were attacked with both; and of thoſe who were attacked with epilepſy more were cut off, while the greater number of ſuch as were attacked with paralyſis of the joints eſcaped; the cauſe of the complaint, as in a criſis, being attracted from the part which it had affected." If Pliny,—a paſſage from whom I have quoted above, in a note upon par. 82.—when he wrote that *colic was a new complaint*, had meant this epidemic, of which Ægineta makes mention, he could not be accuſed of falſity, as he has been by Sennert and Tronchini; for this epidemic ſpaſmodic colic probably had begun many years before, namely, during the reign of Trajan, and continued to ſpread from one diſtrict to another, until the time of Ægineta, who flouriſhed under the Emperor Honorius.

¶ Willis, P. ii. c. 15. "The part principally affected in colic to him appeared to be, the meſentery, on account of its being very ſenſible; from which the morbific matter paſſes, not by the artery, but by the nerves, and that its ſeat is not the coats of the inteſtines, but the nervous plexus of the meſentery."

** Ettmuller, vol. ii. p. 1. *Coll. Pract.* ſect. xi. p. 183.

†† Aſtruc, in a theſis publiſhed at Montpelier, an. 1751, entitled *An morbo colicæ pictonum rectius rachialgia dicto veneſectio in rachio?* Sauvages, *Noſol.* cl. vii. ord. v. n. 29.

The rachialgia of Ludwig is a pain in the ſpine of the back; from Ῥαχις, *ſpina dorſi*, and αλγεω, *doleo.* Aſtruc from hypotheſis derives colic pains from the nerves of the ſpinal marrow being af-

fected. After his example, Sauvages has transferred the name of *rhachialgia* to the *colica pictonum*, *ſaturnina*, and *convulſiva*. But, in fact, the rhachialgia of Ludwig, that is, the true pain of the back, would belong to the kind of diſeaſe by Sauvages named *lumbago*. Rhachialgia is either *idiopathic* or *ſympathetic*. Delius was rather diſpoſed to diſtinguiſh all thoſe things by the name of *notialgia*, from ὠλγεω, *doleo*, and νωτος, *dorſum*.—Firſt, of the *rhachialgia ſympathetica*. In colic pains, not only the arch of the colon, but likewiſe the reſt of the inteſtines, are affected with uneaſy tenſion. But the meſenteric plexus, by deſcending to the aorta, ſo adhere to the ſpine, as to ſeem, as it were, united to it anteriorly, and, therefore, not only occaſion ſhifting ſpaſms in various parts of the inteſtinal canal, but alſo draw the ſpine, at the loins, into conſent. Hence it frequently happens, that the neighbouring ſides are affected together, and the ſpaſms aſcending to the thorax and ribs frequently reſemble pleuritic pains; which, however, ſhortly ceaſe, upon the cauſe of the ſpaſms of the inteſtines being removed by proper remedies. The hemorrhoidal pains frequently paſs to the *os ſacrum*, *loins*, and *ſpine*. For this ought not to be derived merely from the turgid and varicoſe veſſels in the anus, inteſtines, meſocolon, and thoſe derived from the hypogaſtric, but chiefly from the connection of the *hypogaſtric plexus* deſcending to the rectum with the nerves of the os ſacrum, and thoſe of the ſpine in the neighbourhood. Hence, likewiſe, the *hemorrhoidal colic*; for the tenſion ſtretches from the rectum to the loins and inteſtines. The pains during menſtruation, pregnancy, and parturition, frequently extend to the loins. In young puerperal women, frequently a troubleſome tenſion is excited in the back from weakneſs of the ſpine, the parts of which have not yet acquired their due ſtrength. For pregnant women can ſcarcely ſupport the increaſed bulk and weight of the abdomen, in conſequence of which ſuch weakneſs of the ſpine and haunches is occaſioned, that for ſome weeks afterwards they can ſcarcely ſtand upon their legs, but totter; and if they do not refrain from violent exertions, or if they have had a difficult delivery, they on this account experience diſtreſſing and habitual pains in the ſmall of the back for the remainder of life. The ſame inconveniences are liable to attack women more advanced in life, when, during the violent pains of parturition, they over-ſtretch the *ligaments*, *muſcles*, and *nerves* of the ſpine at the loins and the haunch-bones connected with the *os ſacrum*. It appears probable, that from this cauſe the

lacteal abſceſſes, as they are called, more frequently ariſe at the ſpine of the loins and lower parts, than elſewhere. That they may not, therefore, be diſtreſſed with theſe complaints, it is neceſſary by repoſe to reſtore the parts to their former ſtrength. In the nephritic ſpecies of the complaint, on account of the connection of the *renal plexus* with the *meſenteric*, and with the *vertebræ*, tenſive pains aſcend to the ſpine of the back. Sometimes the *nephritic pain* is leſs uneaſy in the region of the kidneys, and more ſevere down at the inguina, teſtes, and ſtretches along the tract of the *crural nerve*, being felt, particularly during walking, at the lumbar ſpine. In fevers alſo, the *laſſitude* and the ſhifting tenſive pains of the back depend on dyſcraſy of the fluids. Hence the lumbago of fevers and ſmall-pox are a ſpecies of *rhachialgia*. But the pains of the back and loins may ariſe from the increaſed motion and impetus of the blood. In general, however, they are to be derived from ſpaſms of the *primæ viæ* ſtretching to the ſpine. Nay, ſpaſms may paſs from the ſpine to *encephalon*, and excite pains of the head by conſent. But enough concerning the *ſympathetic* ſpecies of the complaint. I ſhall now proceed to the idiopathic pains of the ſpine. There is a ſpecies of *idiopathic rhachialgia*, conſiſting in a certain pungent and fixed pain in the vicinity of the thorax and loins, ſtretching to the ſides of the loins and thorax, ſucceeding to violent efforts, immoderate dancing, ſudden twiſting of the ſpine of the back, or even ſudden changes of the body from one ſide to another. With this ſpecies of rachialgia frequently the organs of reſpiration are ſo affected, that the inſpiration is perceived to be deep, ſhort, and ſomewhat painful. For the moſt part this pain, while the body is at reſt, likewiſe ceaſes, eſpecially if the patient find a convenient poſture. But it is ſhortly after excited at the commencement of motion, or when it is continued. Sometimes, alſo, it is conſtant, ceaſing when the body is at reſt, and rendering the reſpiration anxious. When it takes place in the loins, and is fixed there, it not unfrequently increaſes ſo as to affect the whole ſpine of the back, and ſhortly after occaſions a pain, either of the whole head, or at leaſt of the back of the head. In theſe pains the cauſe appears to be, ſome injury ſuſtained by the ſpine of the back. But external violence applied to the muſcles will produce the ſame effect. The ſpine of the back is preſſed upon, and becomes painful, in conſequence of flatus, dropſy, pregnancy, and ſwelling of the meſentery and ovarium. When the ſpine

is injured in conſequence of exertions, dancing, and the carrying of burdens, luxation ſeldom happens. If the ſpine at the ſame time receive a blow, the vertebræ are rather broken, diſtorted, or ſlightly luxated. Sometimes the ligaments are luxated; the veſſels are compreſſed, or open and pour out their fluids; and ſlow corruption of the effuſed matter, and abſceſſes at the ſpine of the back, and oſteoſteatomata take place. The former induce ſlow *caries* of the vertebræ, the latter induce tumours, by which the neighbouring parts are compreſſed; and although bony ſtrata ariſe in the tumour itſelf, ſtill the neighbouring parts of the bones are eroded by foul abſceſſes ariſing in the tumour. In each diſeaſe, after various agoniſing pains of the ſpine, emaciation and ſlow fevers at length cut off the patient. See the inaugural diſſertation of Joan. Gotthelf. Herrman, *de oſteoſteatomate*, Lipſ. 1757. The origin of *exoſtoſes* is to be referred to the laceration, burſting, or luxation of the ligaments. The muſcles alſo are affected, and become inflamed; effuſions, ſtagnations, and œdematous ſwellings enſue; hence pains and abſceſſes. They alſo are luxated, and forced from their ſeat. See Pouteau, *Melange de chir.* Lyon. 1760. Ludwig, *Adverſ. med. pract.* vol. i. P. iv. art. 4.

94. Retaining the generic name of *ſpaſmodic colic*, which to me appears more proper, I have divided it, after Bontæus *, into *primary* and *ſecondary*. The primary ſpecies ariſes from an external cauſe manifeſtly introduced into the ſtomach. And it ought to be conſidered as twofold, namely, the *metallic*, or *ſaturnine* †, ariſing from metallic bodies, eſpecially thoſe of lead, taken either in the form of powder, ſmoke, or vapour; and the *vegetable ſpecies*, or that occaſioned by juices or drink procured from the vegetable kingdom ‡. To the *metallic*, or rather *ſaturnine* ſpecies, ought to be referred, the colic of plumbers, potters, and painters, and the like ‖. To the *vegetable ſpecies*, again, belongs the *colica picto-*

num of Citeſius, the *Devonſhire colic* of Huxham §, the *colica Japonica* of Kaempfer, the *colica Hungarica* and *Franconica* of Sennert, the *colica Moravica* and *Auſtriaca* of Hoffman, and ſimilar varieties occaſioned by particular kinds of wine, or beer, or acid vegetable matters, or acid and ſour fruits. Moreover, to the *ſecondary* ſpecies, the cauſe of which is internally ſituate, and primarily contained in the blood, belong the *colica arthritica* of Muſgrave and Tronchini, the *ſcorbutica* of Sennert and Vanzelſt ¶, the *febrilis* of Riverius **, and the *melancholica*; which are occaſioned by the matter of gout, rheumatiſm, and ſcurvy, or the dregs of fevers imperfectly reſolved, or by an accumulation of black bile in the viſcera of the lower belly.

* *Diſſertat. ſur la coliq. du Poictou dans de journal de medecine, par* M. Vandermonde, tom. xv. p. 399.

† The name of *metallic* is more extenſive and agreeable to thoſe who are of opinion that it ariſes from mercury, arſenic, cinnabar, copper, and other metallic ſubſtances. But it is conſidered as being more properly named *ſaturnine*, by ſuch as derive it intirely from lead, or from its preparations, as the *ceruſſe*, *litharge*, *minium*, the *ſugar*, *extract*, or *tincture*. At the head of thoſe is Stockhauſen, in his book entitled *De lythargyrii fumo noxio, morbifico, ejuſque metallico frequentiori morbo, &c.* Goſlar, 1656, which was publiſhed at Paris, an. 1776, tranſlated into French, with notes, by Gardane. *Traite des mauvais effets de la fume de la litharge, &c.* Nor ought we to paſs over the eſſay of Johan. Guillel. Iſlemann, entitled *Diſſertat. de colic. ſaturnin. metallurg.* Gotting. 1752.

‡ Citeſius, l. c. Sennert, l. c. &c. || Tronchini, *De colic. pictон.* 1757. § *De morb. colic. Damnon.* ¶ *De Podogra*, 1738. ** *Prax. med.* lib. x. c. i. Fernelius, *Pathol.* lib. vi. c. x. &c.

95. The *metallic*, or *ſaturnine* colic, is more frequent, ſevere, and obſtinate, than the other ſpecies. It is likewiſe leſs ſhifting, holding a more conſtant ſeat, namely, chiefly within the range of the inteſtines and meſentery. At the commencement of the complaint, as we are informed by Wilſon,—who had frequently an opportunity of obſerving it in the miners at Lead-hills *,—it firſt betrays itſelf by a ſenſe of uneaſineſs, and unuſual weight about the ſtomach, particularly about the upper orifice. Sometimes, alſo, the inteſtines are affected with pain. In perſons thus affected, the ſaliva is ſweet, and as it were bluiſh, like that of thoſe who have been chewing lead; the pulſe is ſmall; the ſkin cold, and frequently covered with a viſcid ſweat; the legs are benumbed, and totter; the ſtrength fails; the appetite is loſt, and the food is not digeſted. In the mean time, not unfrequently a diarrhœa ſupervenes, and is attended with relief, provided it be of ſhort continuance, and moderate. For if it continue too long, it threatens worſe conſequences. The perſons thus affected do not become bed-faſt, but ſtill walk about, and attend to their affairs. But if theſe ſymptoms continue, or if the perſon afflicted with them indulge in the drinking of ſpirituous or fermented liquors, while the ſtomach is full, or ſhortly after the handling of lead, he is immediately ſeized with a fixed pain in his ſtomach, or in the lower part of the abdomen, frequently extending from one ilium to the other;

and then, in fact, the diſeaſe may be ſaid to be confirmed. It is a mark almoſt excluſively peculiar to the metallic colic, that it is not aggravated by the touch or preſſure. But the ſeverity of the pain is generally ſo great, that the patients are driven almoſt to deſperation; become extremely anxious; are conſtantly agitated; ſhudder, and are ſeized either with a ſtoppage of the urine, or a ſtrangury †. Generally, however, they are not thirſty, nor feveriſh. In the mean time, the belly is ſo much bound, that not only nothing is paſſed, but there is not even room for the admiſſion of a clyſter; and if any thing be brought off by artificial means, it is hard, globular, and nearly reſembles goat's dung. This exceſſive and obſtinate coſtiveneſs, accompanied with remarkable contraction of the abdominal muſcles, and retraction of the umbilicus, conſtitutes an uniform and peculiar ſymptom of the metallic colic. But while theſe ſymptoms are going on, the pulſe, according to Wilſon, ſometimes riſes; the ſkin becomes warm; vertigo and dreadful headach come on; to which either a kind of ſtupor, or wild delirium, ſucceeds, making the patients tear themſelves with their teeth, while the extremities of the body are convulſed, the ſtrength fails, the beats of the arteries intermit, and coma, or apoplexy, puts a period to the patient's miſery. But it more frequently happens, that after long-continued excruciating pains,

enormous vomiting and hiccuping, convulſions, fainting-fits, and contractions of the joints, the complaint terminates—which generally happens within fourteen days—in *pareſis* of the hands or feet, or both, or loſs of motion, but not of feeling; ſometimes in dry *aſthma*, *icterus*, or *diarrhœa*. It not unfrequently happens alſo, that in the midſt of the pains the patient ſuddenly experiences a ſevere attack of epilepſy, which continues to diſtreſs him without interruption for many hours; and, when it has at length ſubſided, we muſt not ſuppoſe that he is relieved from all danger; for it frequently returns ſhortly after, endangering his life, on account of the injury ſuſtained by the brain; or, upon its ſubſiding, a paralyſis of the limbs ſucceeds, or the colic is again revived with ſeverity.

* *Journ. de med. de Vandermonde*, tom. viii. p. 135.
† *Ibid.* p. 106.

96. Many ingenious opinions have been publiſhed by authors of great learning and experience concerning theſe ſpecies of colic *; but it is much to be lamented, that, after innumerable hypotheſes have been advanced concerning them, their nature lies ſtill in darkneſs, and that we are yet doubtful what part is chiefly affected, in what manner their remote cauſes act, and what taint or injury they occaſion, whether in the ſolids or fluids. For the bodies of ſuch as have died of theſe ſpaſmodic colics, and eſpecially of the metallic or ſaturnine kind, although diſſected with

all poſſible care, have thrown no great light on the ſubject. Moreover, it is very difficult in diſeaſes, eſpecially where the nerves are immediately affected, to diſtinguiſh the cauſe from the effect. Tronchini affirms †, that, in general, in the bodies of thoſe who have died of the ſevereſt colic, nothing is diſcovered, except that the inteſtines are ſomewhat pale, and diſtended with flatus. He moreover adds, that Senac opened the bodies of upwards of fifty perſons who had died of colica pictonum, without being able to detect the ſmalleſt veſtige of their cauſe; as he was informed, by a letter from him, about the year 1750. He likewiſe confirms this by the diſſection of a painter of Angiers, who was opened by Fernelius, in whoſe body the liver, ſpleen, ſtomach, and kidneys, appeared ſound, while no obſtruction in the gall-bladder, no accumulation of morbid fluid in the meſentery, and nothing, in ſhort, any where which might have been the cauſe of ſuch excruciating pains, could be detected. However, he excepts thoſe caſes in which the remains of imperfectly reſolved, or ill treated fevers, or ſcurvy, or melancholy, have occaſioned the diſeaſe; for he confeſſes that ſome veſtige may be diſcovered on diſſection. He does not heſitate to prove this, not only by an obſervation quoted from the *Adverſaria* of P. Milo, a phyſician of Poictiers,—from which it appears, that, in the body of a Franciſcan friar, the membranes of the jejunum, not far from the liver, were filled

with green bile, the inteſtine diſtended with flatus, and all the coats, except the external one derived from the peritoneum, were corroded by the acrimony of the bile, while the omentum itſelf did not remain exempt from the affection; but alſo by two caſes which fell under his own obſervation. In the firſt of theſe he makes mention of a man of the melancholic temperament, who had died, after extreme torment, of colic pains, and in whom the concave part of the liver, and neighbouring parts, appeared tinged with a kind of blackiſh-green pigment. In the other he adduces the diſſection of a man who had died of ſcorbutic colic pains, in whom the innermoſt coat of the inteſtines appeared deprived of its mucus, and throughout ſlightly corroded, by the acrimony of the fluids; and their veſſels, as well as thoſe of the meſentery, were found varicoſe, and filled with black blood ‡.

* See Citeſius, l. c. Sennert, l. c. Riverius, l. c. Crato, l. c. Graſhvys, *De col. pict. tentam.* Tronchini, l. c. Huxham, l. c. Stockhauſen, l. c. Ilſeman, l. c. Bontæus, l. c. Baker, l. c. De Haen, *Rat. med.* par. 4. c. viii. Lieutaud, *Diar. med. obſ.* l. i. Maſſuet, *Diſſert. ſur la coliq. dans la bibliotaq. raiſonée*, tom. vii. p. 144. & 279. And Strack, who, after carefully collecting and tranſlating the obſervations which he had inſerted in the *Paris Journal* for April 1765, p. 235. and for February 1766, p. 125. concerning *colica pictonum*, publiſhed them in the year 1772, at Leipſic and Francfort. † *De colic. pict.* c. xix.

‡ We find, among the author's papers, ſeveral other hiſtories and anatomical obſervations in illuſtration of this pathology, wherefore I have judged it proper to ſubjoin them, not to omit any thing which might afford any aſſiſtance to the reader. [*Germ. Edit.*].

Wilſon—who has ſhewn, that animals expoſed to the vapours ariſing from the melting of lead, or which feed upon plants impregnated with them, are attacked with the ſame complaints as men—records the following obſervation: "In a dog which had died of the colica ſaturnina, I found the inner coat of the ſtomach and inteſtines in different parts encruſted with the powder of the lead; and likewiſe ſlight inflammations here and there, of which ſome had paſſed into gangrene, and been perforated. The fæces were ſcanty, and very hard. The coats of the inteſtines were very thick, and their cavity much diminiſhed." Lieutaud (*Diar. med.* vol. i. lib. i. obſ. 76.) obſerves: "A painter, after having had the colica ſaturnina, was ſeized with a ſpitting of blood. Independent of morbid ſtates of the lungs and pleura, the duodenum, jejunum, and ilium, were here and there found inflamed. The liver was obſtructed, and the pancreas hard." The ſame author (obſ. 425.), in the body of a young man, by trade a brazier, who had died of the colica ſaturnina, obſerved the inteſtines very much ſwelled, and marked with livid or black ſpots. The colon was conſtricted in various parts, independent of morbid ſtates of the lungs. The ſame author (obſ. 433.), in another perſon, who had died of the colica ſaturnina within two days, obſerved the colon and rectum unuſually diſtended, with various gangrenous ſpots, and ſome conſtrictions. In another painter (obſ. 77.), who had been carried off by the ſame diſeaſe, he found the inteſtines in various parts conſtricted, and, as it were, ſtrangulated, with many gangrenous ſpots of a reddiſh livid colour, eſpecially in the jejunum and ilium, the veſſels of which were very turgid: nor was the ſtomach itſelf free from inflammation and theſe ſpots. In a painter who was affected with the ſame pain, to which delirium and convulſions had ſucceeded before death, the omentum was found by him in a ſtate of gangrene, the colon ſtraitened, and, the cells being obliterated, merely cylindrical, the cœcum ſurpriſingly diſtended, and putrid, and the gall-bladder filled with black bile. He likewiſe (obſ. 1172.) mentions a lapidary, who, after the colica ſaturnina, and contraction of the hands, from which he was recovering, began to ſwell, with pain, and was cut off by a ſlow fever. He found his inteſtines livid, and ſurrounded with ſanies; and the lungs abounding with hard, and, as it were, cartilaginous tubercles, and throughout containing pus. Laſtly (lib. ii. obſ. 151.), he mentions the caſe of an artificer, who died in conſequence of the colica ſaturnina. His belly had become ſwelled and tenſe. His

inteſtines were immoderately diſtended with flatus, eſpecially the part of the colon lying in the epigaſtrium, the part of the liver in the neighbourhood of which being, as it were, bruiſed, was marked with an ecchymoſis.

97. Nor are authors agreed, whether the epilepſy and paralyſis into which patients fall is to be derived from a metaſtaſis, or merely from the communication of the par vagum and intercoſtal nerves, with which the nerves of the arms and legs frequently conſent. The ceaſing of the pains, however, without being attended with any excretion, which generally takes place upon a ſevere fit of epilepſy or paralyſis coming on; the ready tranſition of epilepſy into apoplexy; the long continuance and obſtinacy of the paralyſis; and, laſtly, the ſwellings, which, like ganglia, take place in the metacarpus and metatarſus, ſeem to favour the firſt opinion. To which, if we add the method of cure by which both the paralyſis and ſuch ſwellings are diſcuſſed, it renders it ſtill more probable. Nor is it any objection to this opinion, that this pareſis diſappears merely in conſequence of the application of remedies to the abdomen, and internally, as Van Swieten is convinced. Hillary * mentions a caſe, from which it appears, that the *matter* of the diſeaſe cauſed the *paralyſis* of the hands, which being diſcuſſed by external applications, the *pain* of the *inteſtines* returned, and, on it again ceaſing, the paralyſis of the hands was renewed †.

* *Obſervations on the changes of the air, &c.* p. 182.

† The author, among his *Adverſaria*, has ſome extracts from the work of Strack upon the *colica pictonum*, which I have thought proper to transfer to this place, in order as far as poſſible to elucidate the obſcure nature of the diſeaſe by the obſervations of others. [*Germ. Editor.*]

" Strack firſt inquires, whether or not any certain concluſion can be drawn concerning the cauſe of this diſeaſe, which is otherwiſe doubtful. Some have ſought for it in lead and ceruſſe; others in litharge, tin, copper, and crude antimony; others in different pigments, in apples, pears, and unripe grapes. Hence ſome have named the diſeaſe *colica pictonum*,——*deauratorum*,——*figulorum*; others the *colica pictonum*,——*vegetabilis*, or the *colica metallica*. Tronchini enumerates eight different ſpecies of it. Graſhvys conſiders as a cauſe of this diſeaſe, whatever deprives the inner coat of the inteſtines of its mucus. Citeſius derives the name from the country of Poictiers *(pictones)*. Others pronounce the nature of the diſeaſe to be almoſt intirely unknown.

" From various obſervations he learnt, that beſides the cauſes already mentioned, another frequently occurs, namely, the ſhifting of the arthritic matter, and its being carried down to the lower belly, to which alone he directed the cure; and he confirms the propriety of his method by the hiſtories of the patients whom he treated. He uſed to employ the decoction of the woods, crude antimony, the warm and tepid bath, and by theſe means he fulfilled the caſual indication. For the bath he recommended certain hot ſprings; and he employed the bath to prevent the diſeaſe. For it is apt to return, and the more certainly, if the bath has been employed but a ſhort time; hence he recommends to his patients employing it 200 times, and upwards.

" Among the ſymptoms of colic derived from the arthritic matter, he enumerates this one, that, in the midſt of the griping, the abdominal muſcles are ſo ſenſible and contracted, that the patient cannot raiſe himſelf, but remains with his body bent, and his head ſtooping; and this he reckons a pathognomonic ſymptom.

" He does not deny that the cauſes above mentioned ſometimes occaſion colic; but never the *colica pictonum*. After, therefore, refuting thoſe who name the colic of painters the *colica ſaturnina*, he aſſerts, with Muſgrave, that it is an *arthritic colic*; and that anti-

mony, which Tronchini enumerates among the cauſes of this colic, is the beſt remedy againſt the colica pictonum.

"The diagnoſis is either eaſy or difficult. It is likewiſe eaſily known by one ſymptom; if a ſhifting pain attack different parts, external and internal, and if at length the arthritic matter ſettle in the abdomen.

"When a fixed pain at firſt occupies the abdomen, it is more difficult to aſcertain whether the colic proceeds from the arthritic matter, or from another cauſe. It is diſtinguiſhed, however, by the following marks: If there be no other probable cauſe which can be put in competition with the arthritic; if there be preſent a violent pain, and if it be without fever and inflammation, but with a ſmall and ſlow pulſe; if the colour of the ſkin be yellow or olive, the eyes hollow, and ſurrounded with a lead-coloured line; if the patient feel pains in the joints, and if, likewiſe, he experience rapid and great laſſitude, after ſlight fatigue, together with aſthma; if the debility be greater after ſleep than before it; if the ſweat be attended with burning heat, and the ſkin be covered with miliary ſpots; if there be a ſhifting titillation upon the ſkin of the face, and eſpecially on the forehead, when the patient, on applying his hand, feels nothing; if there be thin urine, attended with a burning ſtrangury; or that which is whitiſh, like ſmooth, oily whey, with a white ſediment, is diſcharged. Theſe ſymptoms, to the author, appear to denote an arthritic cauſe.

"The outlet of the arthritic matter takes place either by ſweat or urine, or an abſceſs, very rarely by a diarrhœa; ſometimes alternately by ſweat and urine, with the intervention of an abſceſs.

"It is a favourable ſymptom if the pain be increaſed about the fifteenth bathing. The matter of the diſeaſe is then ſet in motion, and a fever is excited.

"The miaſma of the ſhifting arthritis is a ſingular one, and may be different from every other diſeaſe and epidemic. It does not agree with gout; for the nodes of gouty patients, if they be ulcerated, pour out a white, calcareous, inodorous matter, while thoſe of arthritic patients pour out a black matter, ſmelling like a rotten egg, but without caries of the bones. Hence alſo he recommends bliſters and iſſues." *Com. Lipſ.* vol. xviii. P. i. p. 674.

98. Laſtly, it remains for me to point out by what ſymptoms the *ſtomachic*, *pancreatic*, *meſente-*

ric, *hyſterical*, *nephritic*, and *hepatic* ſpecies of colic, are to be diſtinguiſhed. With reſpect to the firſt, I have already treated of it at ſufficient length in Chap. VI. concerning *Gaſtrodynia*. Both the peculiar ſeat, nature, and ſize of the pancreas, uterus, and meſentery, and the diſeaſes of theſe parts, whether chronic or acute, will afford an attentive practitioner ſufficient grounds for diſtinguiſhing the pains of theſe parts from others. The *hepatic* ſpecies is diſtinguiſhed from others, not only by its ſeat, but likewiſe by the preſence of *icterus*, ſaffron-coloured urine, white fæces, and frequent ſtools. The *nephritic* ſpecies very conſtantly diſtreſſes one or other of the kidneys; extends along the ureter, retracts the teſticle, cauſes numbneſs of the thigh, ſometimes occaſions ſtrangury, or at leaſt is attended with a diſcharge of urine, which is at firſt thin and limpid, and afterwards thick, and depoſits ſand; it is not, in general, aggravated by food; it is not relieved by vomiting or purging; while, in pain of the inteſtines, the contrary takes place, in which alſo the urine is paſſed thicker, and more ſaturated with its contents.

THE PROGNOSIS.

99. Colic, although it often ſoon terminates favourably, is a complaint not to be treated ſlightly. For ſometimes, in conſequence of the ſeverity and continuance of the pains, it very quickly cuts off the patient. The bad ſymptoms

are, fever, watching, obſtinate coſtiveneſs, loſs of ſtrength, hiccup, vomiting, ileus, coldneſs of the extremities, a cold ſweat, ſyncope, convulſions, and epilepſy. It generally terminates in inflammation and gangrene, or ſphacelus * of the inteſtines. The flatulent ſpecies, if it do not ariſe from new wine, or other fermenting things, is attended with leſs danger, as alſo is the *hyſterical*, *hypochondriacal*, and ſimple *convulſive* ſpecies, that from phlegm, from the ingeſta, and from worms. In this ſpecies, however, there is a riſk of the inteſtines being perforated, or of an intuſſuſceptio taking place †. The *bilious* and *inflammatory* ſpecies are more dangerous. But the *ſpaſmodic*, the *colica pictonum*, *metallica*, or *ſaturnina*, is ſtill more to be dreaded. The author of the *Coacæ Prænotiones* obſerves ‡: "When perſons labour under long-continued pains of the loins and ſmall inteſtines, and anxiety about the præcordia, accompanied with fever and loathing of food, if an intenſe pain ariſe in the head, attended with a ſpecies of convulſions, it quickly proves fatal." He likewiſe obſerves: "That perſons in whom tormina, and pains about the umbilicus and in the loins occur, which are removed neither by a purge, nor otherwiſe, are attacked with a dry dropſy ‖." Epilepſy ſupervening generally proves fatal. When the pain is removed, if the fæces come off with difficulty, and in the form of ſcybala, there is reaſon to apprehend the return of the colic. Paralyſis, how-

ever, for the moſt part removes colic pains, and averts the immediate danger to life; but it occaſions laſting illneſs, from which the patients recover with the greateſt difficulty. It is a favourable ſymptom in that which proceeds from a metaſtaſis of gout, rheumatiſm, ſcurvy, or retention of the perſpirable matter, when the pains return to the joints, when ſpots break out on the ſkin, and when the body is covered with copious, warm, equally-diffuſed ſweats. Sometimes, likewiſe, an epiſtaxis, a diſcharge of blood from the hemorrhoidal veins, or uterus, or a diarrhœa, alleviate the complaint.

* To this part belong the Aphoriſms of Hippocrates, beginning with "Ab ileo vomitus," &c. and "ileus cum apprehenderit," &c. which we have mentioned, in the laſt place, among the notes upon par. 86.

† In a perſon who had died of a colic pain and other ſymptoms, Robin found the *cæcum* incloſed within the colon. The ſame author alſo found a rectum, which, in its upper part, had received the cœcum, and no ſmall part of the colon; and Le Blanc has a ſimilar obſervation. In both patients, beſides the moſt excruciating pains in the abdomen, vomiting likewiſe occurred. *Mem. de l'acad. de chir.* vol. xi. p. 353. 354.

‡ Numb. 317. ‖ Aph. xi. ſect. iv.

THE CURE.

100. In every colic, that method of cure will be found to be beſt which is adapted to the indications. But the indications muſt be the ſame as thoſe laid down in the chapter on *Gaſtrodynia* (80.); nor will the cure be different (81.). When

the pain is preſent, therefore, blood ought to be drawn from the arm, foot, and hemorrhoidal veins, in the *colica ſanguinea*, *inflammatoria*, and *catamenialis*; as alſo in the *bilioſa* *, or any other ſpecies, if the heat of the fever, the thirſt, and ſize of the pulſe, give reaſon to ſuſpect the preſence of inflammation. Likewiſe, dry and bloody cupping-glaſſes may be ſometimes applied to the abdomen and ſoles of the feet, with the view of revulſion, eſpecially in the *ſpaſmodic*, *ſanguineous*, and *inflammatory* ſpecies. By theſe means alſo, the ſpaſm with which the inteſtines and other parts are affected, is uſually reſolved. Among them Pringle recommends the application of bliſters to the part affected †. The pain, however, is more immediately removed by bland and freſh oils, taken abundantly and frequently; by emollient injections; by fomentations; by cataplaſms; by liniments applied warm to the belly; by tepid bathing of the feet, eſpecially in the *bilious* ſpecies ‡; and by remedies prepared with opium; eſpecially when the material cauſe has been ſubdued or diminiſhed. We muſt endeavour to correct, and quickly and gently evacuate it, as far as lies in our power.

* In the *Adverſaria* of the author, we find remarked, in the hand-writing of Dallarmi,—his former friend and pupil,—that he had ſeen at Fayence, in a nobleman affected with this colic, and a high degree of jaundice, which had frequently attacked him, blood repeatedly drawn by the author with the greateſt ſucceſs, without the patient having again been attacked either with the colic or jaundice. We have thought proper to inſert this, to ſhew how much ſome depart from the truth, who immediately exclaim, on ſeeing

patients affected with the jaundice, that we ought intirely to abſtain from bleeding. But there is a mean to be obſerved. See par. 244. Vol. I. *Of Fevers*, when it is to be employed with caution. See alſo *Trattato delle acque di S.* Criſtofora, p. 82. et ſeqq. [*Germ. Editor*].

† *Diſeaſes of the army.* † Porter, *Edin. med. eſſays.*

101. Compreſſion of the abdomen generally affords relief in the *flatulent* and *convulſive* ſpecies; and, moreover, the ſpirit of ſweet nitre is recommended by Hartman and Hoffman, together with the *liquor anodynus mineralis*, caſtor, and the decoction of chamomile, and other carminitives, as they are called. When the pain remits, which happens after an injection has been thrown in, the belly may be likewiſe advantageouſly purged by a gentle laxative, as rhubarb, manna, the pills of Becher, and the like. When a great quantity of rarefied air is preſent, and the abdomen is much inflated, frequently the drinking of cold water, and cold external applications, condenſe the air, and excite the re-action of the fibres *. This has alſo not unfrequently proved ſerviceable in the *bilious* colic †; which likewiſe receives benefit from ſubacid ſubſtances, whey, infuſions of tamarinds and caſſia, nitre, and the like. To allay the heat, to attenuate the lentor of the fluids, and to correct the alkaline acrimony of the bile, ſome vegetable acid ought to be mixed with the water to be drunk, as lemon, citron, or orange juice, ſyrups prepared from theſe; as alſo bar-berries, raſpberries, &c.; and, when the diſeaſe is violent,

we muſt have recourſe to the more powerful remedies, already repeatedly mentioned. In the *colica ſtercoralis*, briſk purging muſt be uſed. The bowels ought to be excited, not only by gently ſtimulant clyſters, eſpecially a decoction of tobacco, but alſo by manna, conjoined with oily remedies, or by linſeed, or olive oil. Some authors, as Redi, propoſe the water of particular ſprings, and the Engliſh ſalts, largely diluted with water, or cathartics corrected with opium, as Sydenham, Riverius ‡, and Huxham ‖, whenever the complaint does not yield to ſlighter remedies. Galen added aloes to the opium. Hoffman declares, that he has known country-men diſtreſſed with the moſt excruciating pain of the bowels, who were inſtantly relieved by the ſwallowing of the ſmoke of tobacco §. In the cure of the pituitous ſpecies, inciſive and ſaline remedies, gum-ammoniac, and the ſeeds of the *daucus Creticus*, and Venice ſoap, are recommended; but a prudent practitioner will have recourſe to them cautiouſly. Scardona, in this colic, when very obſtinate, preferred to all other remedies, the acidulous hot ſprings, drunk during warm weather; "for," he obſerves, "it is a remedy, the utility of which is proved by an infinite number of experiments ¶." The remedies calculated for the removal of worms will be mentioned particularly elſewhere. The *meconium*, or coagulated milk, is gently drawn off by ſweet and oily remedies, by ſyrup of ſuccory, with rhubarb, by cow's gall rubbed upon

the belly, by clyſters, and ſuppoſitories. During parturition, if the ſtrength fail in conſequence of pain, waters diſtilled from black cherries, balm, citrons, and oranges, or ſome bread dipped in wine, or animal ſoup, &c. may be given. If the pains be *ſpurious*, it will be proper to add ſome laudanum. If hyſteria come on, it will be ſufficient to pour into the waters already mentioned a few drops of the tincture of amber or caſtor, and to give it by ſpoonfuls. In the hyſteric colic, which is ſeated in the uterus or neighbouring parts, Rochard, adducing inſtances of cures, contends **, that clyſters of cold water, thrown in every two hours, and linen wrung from it applied to the belly, completes the cure ††.

* Galen removed a pain, occaſioned by flatulence, by the application of a dry cupping-glaſs, with much flame. See *meth. med.* lib. xii. † See Galen, l. c. c. vii. Trallianus, lib. x. p. 175. Avicenna, lib. iii. tract. iii. c. vi. Amatus Luſitunus, lib. i. cent. ii. & lib. ii. cent. xlvi. Septali, *Animadv. med.* lib. vii. ſect. 81. ‡ *Obſerv. med.* cent. i. obſ. 1.

‖ *De morb. colic. damnon.* where he preſcribes the following formula.——R. Cochl. min. a ſcrup. j. ad ſemi drachm. Calomelan. ſcrup ſemis. Laudani ſolidi, gr. j. Olei caryophil. gutt. j. M. F. pilul. After two or three doſes, he preſcribes an infuſion of ſenna, or a decoction of manna. Sometimes alſo, oil to the extent of ſix ounces.

§ Van Swieten, § 964. p. 131. ¶ Lib. iii. p. 64.

** *Journ. de med. Jan.* 1772, p. 42.

†† In the colic which ſucceeds to ſuppreſſion of the menſes, Riverius and Hoffman recommend the uſe of cold water, as Van Swieten obſerves; or even propoſe throwing up injections of the ſame.

102. But it is now neceſſary to ſay ſomething concerning the cure of the *ſpaſmodic colic*, into which the preceding ſpecies frequently paſs. In it, in general, all acrid things, cathartics, and generous things *, ought to be baniſhed. Bleeding is ſcarcely admiſſible. Emollient and demulcent remedies, which remove ſpaſms, both taken internally, and applied externally, are preferable; and, laſtly, thoſe things which gently, and *per epicraſin*, open the belly. There are not wanting inſtances, however, in which the ſmoke of tobacco, thrown in *per anum*, has proved ſerviceable. De Haën, likewiſe, in the colic named *ſhut*, or that of Poictiers, was ſucceſsful in opening the bowels, after they had been obſtinately ſhut for fourteen days, in the caſe of a ſtudent whom he attended, by means of a very ſtrong purging infuſion, the doſe of which was four times greater than uſual, but given at intervals, until the belly was looſened †. Likewiſe a method, the oppoſite of this antiſpaſmodic one, is recommended by Dubois and Bouvert, by employing which they affirm having very quickly removed ſuch colics, and which conſiſts in acrid clyſters, emetics, and rough cathartics, interpoſing opiates. If the diſeaſe proceed from retention of the perſpirable matter, if from fevers being imperfectly reſolved, or from arthritis, or ſcurvy,—diaphoretics and antiſcorbutics are to be employed, as, the decoctions of the woods, eſpecially ſaſſafras; viper-ſoup; the juice of ſuccory,

and of antiſcorbutic vegetables; the bath; hot mineral ſprings; frictions; and epiſpaſtics. But when an auſtere acid, or acid drink, has given origin to the diſeaſe, ſudorifics of camphor mixed with opium, and an infuſion of ſage; alkaline remedies; animal ſoups; jellies; and, laſtly, the uſe of ſteel, are moſt proper. After having employed other remedies to no purpoſe, Sydenham had recourſe to the balſam of Peru, to the extent of half a dram for a doſe, with effect. The bark, to be taken to the extent of a dram ‡, is recommended by Petrus de Rotundis ‖. But, in the *metallic* or *ſaturnine* ſpecies, if the cauſe be recent, it ought to be immediately ejected, and a paregoric afterwards given. When the diſeaſe is at its height, beſides emollient fomentations, the bath, and the uſual remedies for alleviating pain (100.), it is proper to make a trial of the power of opium, which may be given to the extent of half a grain, with a little camphor, every three hours, until the pain be allayed. After it the belly ought to be relaxed by means of cathartics; after which demulcent, oily things, whey, aſſes, mares, or goats milk, ought to be employed for a conſiderable length of time, along with Venice ſoap. In this caſe, alſo, the employment of bliſters and ſinapiſms produces ſurpriſing benefit §. Biſſet, beſides the remedies now mentioned, contends that the bezoar mineral is a remedy of the greateſt efficacy, if the diſeaſe ariſe from the fumes or

ſmall particles of arſenic. He likewiſe recommends the application of bliſters to the anterior and upper part of the thigh. When ſalivation comes on, he preſcribes a laxative, conſiſting of half an ounce of a cathartic ſalt, boiled in wine, with aniſeed ¶.

* Geſner, Platner, Spigeli, Sennert, Wepfer, Willis, Hoffman, Bordeu, De Haen, Sauvages, Ludwig, &c.

† *Rat. med.* P. i. p. 4. and more in P. iii. c. ii. *De colic. pict.* which ſee.

‡ *De viſt. rat. in febr. acut. &c.* p. 167. Likewiſe Van Swieten affirms, that this bark is recommended by others in the *colica periodica*, § 757. but that by others the theriac is uſed before the paroxyſm. Baglivi alſo informs us, that this colic is in a ſhort time removed, by adminiſtering a gentle purgative three hours before the attack of the pains; and that all other kinds of pain are allayed by repeated evacuations of that kind.

‖ The good effects produced in a *colica pictonum* attended with the moſt ſevere convulſions, by employing the *aqua benedicta* of Ruland, in the form of a clyſter, are mentioned in the *Journ. de med.* for June 1782, p. 92.

§ Tiſſot (*Epiſt. var. arg.* p. 152.) has three hiſtories of colic occaſioned by lead, for the cure of which he recommends the tepid bath, injections of olive-oil, and ſyrup of marſh-mallows, of each an ounce and a half. For the drink he preſcribes water, prepared with ſyrup of marſh-mallows. His formula for a cathartic is as follows:—R. Seri lact. lib. j. in quo ſolv. mann. ping. unc. j. ſs. Colatur. add. ſyrup. alth. unc. j. nitri gr. xij. ſyrup. papav. alb. et aq. naphæ ana drach. j. cujus unc. ij. omn. hor. quadrante calide ſorbillentur. He applies emollient cataplaſms to the belly, throwing in the vapours of warm water *per anum*, together with emollient injections every other hour. He deſires one ounce of manna, diſſolved in a large quantity of whey, to be given every three hours, until the belly is purged. He even proceeds as far as eight ounces, or more. ¶ *Med. eſſays and obſervat.* p. 92.

103. The pareſis, which frequently follows colic, and which by Tronchini is aſcribed to induration of the nerves, and default of the mucus and lymph, with which they are moiſtened, if it be recent, and ſtill curable, is to be treated by incloſing the limbs in the bellies of newly-killed animals; by frequent and repeated friction; by mineral hot baths; by ſtimulant liniments; by the external or internal employment of volatile remedies; by the ferulaceous gums, mixed with the balſam of Mecca or Peru, given internally in a ſmall doſe, and for a length of time; by weak Canary, Greek, or Madeira wines, employed ſparingly; and by a change of climate. Laſtly, electricity ought to be tried, to excite the nervous and muſcular power. Orteſchi, in his *Medical Journal*, n. xi. publiſhed at Venice in the year 1763, mentions that ſeveral have been freed from this diſeaſe by the employment of the *aurum fulminans* *. Thoſe remedies are employed in the other varieties of colic which are beſt adapted to the varieties of the cauſes †. Moreover, the return of the diſeaſe, which—as Sydenham obſerves ‡, in its nature is very apt to return—ought to be prevented by the moſt ſcrupulous attention to the diet; by tranquillity of mind; by riding; by keeping up an uniform and temperate heat of the feet and belly; by watery drink; by acidulous things; by milk, and peruvian bark, eſpecially if the colic return periodically; by ſteel; and keeping the bowels open.

* Tiſſot (l. c.), in order to remove the pareſis, after previouſly opening the belly, applies a plaſter of *galbanum crocatum*. He preſcribes a bolus of camphor, benzoin, aſſafœtida, powder of elecampane-root, and of balſam of Peru and ſugar ground down; and deſires the patient to drink over it a decoction of burdock, ſaſſafras, and marſh-mallows, friction of the lower extremities with ſubſtances impregnated with amber, and, together with theſe, he recommends eaſily digeſtible food.

† See the cure of the *icteric*, *hepatic*, *meſenteric*, and *pancreatic* ſpecies of colic, in Chapters XIII. XIV. XV. in which there is a particular diſcuſſion of the diſeaſes of thoſe parts,

‡ Sect. iv. chap. vii.

CHAPTER VIII.

CONCERNING BOUND BELLY AND ILEUS.

104. Too long retention of the fæces in the inteſtines, eſpecially the large inteſtines, is named *bound belly*; but if the fæces be intirely ſuppreſſed, it is then ſaid to be *obſtructed*. The proximate cauſe of the complaint, therefore, conſiſts in the difficult, or altogether impeded deſcent and evacuation of the excrements. This may happen, either from the languid motion of the inteſtines, from their relaxation, dilatation, atony, and inſenſibility, or, on the other hand, from extreme ſenſibility and irritability, or ſpaſm of them; from defect of bile and pancreatic juice; from an inſufficiency of the mucus with which the inteſtines are lined; from too great activity of the lacteals and abſorbents; from neglect of the

natural ſtimulus by which we are ſolicited to evacuate the contents of the inteſtines; from the diminiſhed diameter of the inteſtines, induced by a morbid ſtructure, either born with the patient, or occaſioned by diſeaſe; a ſwelling ariſing in them; a ſpaſmodic contraction; thickneſs, or induration, or growing together, or compreſſion of the coats, or complication or intus-ſuſceptio of the inteſtines *; their entering into a ſtraitened ſituation, as in *hernia abdominalis*, *umbilicalis*, *cruralis*, *inguinalis*, and in that of the ſcrotum itſelf †.

* The *indigitatio*, or *invaginatio*, of the inteſtines, if it be not very great, and at the ſame time very ſtrait, according to Morgagni, cannot induce *ileus*. Haller alſo, as both in men and in brutes he has obſerved ſuch *indigitations*, unaccompanied with inflammation, eaſily reſolved by the paſſing of flatus, is of opinion, that ileus can by no means ariſe from this cauſe; "for," he obſerves, "it is a complaint in its nature too mobile, and diſpoſed of itſelf to reſolution, and, if it were ſerious or deadly, it would indicate its violence by inflammation, and a collection of the food at that part of the inteſtine in which the intus-ſuſceptio takes place. But I have never ſeen either kind of complaint conjoined with it." *Opuſc. pathol.* obſ. xxvii.

† Morgagni (epiſt. xxxiv. n. 35.) ſays: "Volvulus is derived either from hernia, even when inconſiderable; or from inflammation of the inteſtine; or from *intus-ſuſceptio*, accompanied with induration, and ſuch ſtricture as to completely obſtruct the paſſage, or from other obſtructing and violently ſtimulating cauſes."

105. The remote cauſes of the complaint are, a warm and dry temperament; increaſed perſpiration; ſcanty drink; viſcid, dry, ſour articles of diet; aſtringent, ſaturnine, irritating medicines and acrid cathartics; the abuſe of ſalted things;

a ſedentary life, hypochondriaſis, and hyſteria; obſtructions and ſwellings in the lower part of the belly; morbid ſtates of the brain and ſpinal marrow, in conſequence of which paralyſis of the inteſtines takes place *; the urinary bladder being any how diſtended; pregnancy; ſwellings of the uterus, vagina, and rectum; blind piles; and a good many ſimilar cauſes †.

* Ruyſch, among other cauſes of ileus, mentions paralyſis of the ſmall inteſtines.

† We read of a *ſingular excreſcence* having been obſerved by Meckel, formed in the great inteſtines, and afterwards diſcharged, reſembling a real *hydatid*, which had impeded the free diſcharge of the fæces. See *Mem. des ſcienc. bell. lett. de Berlin.* an. 1759, p. 36.

106. If the belly be ſo much obſtructed that the contents of the inteſtines riſe upwards, and are expelled by vomiting, we then name the diſeaſe, with moſt of the moderns, *ileus*, or the *iliac paſſion*, or *volvulus*. For I differ from thoſe who only beſtow this name upon the *iliac pain*, or inflammation of the inteſtines. I grant, indeed, that theſe complaints often terminate in *ileus*, or are not unfrequently conjoined with it; but I contend that this is not the only and uniform cauſe of the complaint. Moreover, in theſe affections the *vomiting* and obſtinate *coſtiveneſs*, which conſtitute the nature of *ileus*, neither ſeem to be conſtantly preſent, nor attended with ſuch violence as in *ileus*.

107. Hence it appears, that its proximate cauſe is the inverted, or antiperiſtaltic motion of

the inteſtines, occaſioned by whatever ſo increaſes the contractile power any where, that its action prevails over the periſtaltic motion of the ſuperior parts; or, on account of being more powerful, attracts to it the weakened motion of the lower parts; or, laſtly, whatever ſo obſtructs the paſſages, that the deſcent of the contents of the inteſtines is prevented, ſuch are, violent ſpaſm, convulſions, ſevere vomiting, inflammation, colic and iliac pains, and their cauſes, elſewhere enumerated (86. 87.), and all of theſe mentioned a little before (104. 105.) *. In the body of a woman who had frequently complained of a pain in the right iliac region, and who, after falling from a height, felt a more acute pain, and, after being diſtreſſed with a bilious vomiting for three days, was at length carried off, Meckel diſcovered a calculus in the *jejunum*, at the ſide of the right umbilical region, by which its cavity was intirely ſhut up †. There is likewiſe a curious obſervation of Lieutaud ‡, of a boy, in whoſe body, about the termination of the ilium, a collection of worms, rolled into a maſs as big as the fiſt, and completely obſtructing the inteſtine, was found.

* To this part may be transferred the inſtances of *intus-ſuſceptio*, quoted from Robin and Leblanc (99. note †). Likewiſe the obſervations of Morgagni, concerning the cauſes of *volvulus*, in the note upon par. 104.

† *Hiſt. de l'acad. roy. des ſcienc. et belles lettres de Berlin.* 1759, p. 35. ‡ *Hiſt. anat. med.* vol. i. p. 75.

THE DIAGNOSIS.

108. BOUND or obſtructed belly (104.) is firſt announced by the intimation of the patient. Nor is it difficult to recogniſe the preſence of *ileus* (116.). For, in the latter, either nothing at all is paſſed, or the diſcharge is ſcanty and thin. Somewhat, however, may be paſſed if the inteſtine be not altogether obſtructed, and if the ileus ariſe from the appendages which are ſometimes found in the ilium, falling into the ring of the abdominal muſcles, and being there ſtrangulated. The abdomen is pained, eſpecially about the umbilicus, becomes tenſe, ſwells, and at firſt a loathing of food and nauſea occur, followed by vomiting, firſt of food and drink, and afterwards of bile and other fluids, and, laſtly, of putrid, fetid, and fecal matters, accompanied with the greateſt degree of anxiety, and frequent faintings. Sometimes alſo, theſe ſymptoms are attended with fever, enteritis, hiccup, convulſions, delirium, and other fatal ſymptoms, which I have already mentioned as accompanying the moſt ſevere colics. Nor does it happen, that the excrements, which are collected above the obſtacle, alone are voided by the mouth, but likewiſe thoſe that are found beneath it; and even clyſters and ſuppoſitories themſelves are ſaid to be ſometimes diſcharged in the ſame manner. Which laſt fact, although it does not, perhaps, reſt upon ſufficiently-well eſtabliſhed obſervations, ſtill does not ſeem alto-

gether to ſurpaſs belief. For if the cauſe, inverting the motion of the inteſtines, be of ſuch a nature as no where to ſhut up their cavity, or not wholly to obliterate it, or even though it do occaſion ſuch obſtruction, if this do not take place in the rectum,—for, as diſſection has ſhewn, no part of the whole alimentary canal is exempt from ſuch an affection *,—things thrown in *per anum*, in conſequence of the inverted periſtaltic motion, or being forced up, may be carried beyond the obſtacle, and rejected upwards. But it may be ſaid, that the valve of the colon would prevent this. This is by no means the caſe. For it may be ſo preſſed upon by the matters ruſhing upon them, and endeavouring to paſs from the colon into the ilium, that yielding and opening it leaves free acceſs to them; as injections paſſing out of the mouth demonſtrate †. Add to this, that ſometimes the valve itſelf is burſt; as Haller aſſures us ‡.

* In the ilium itſelf fæces are found; they are not, therefore, contained wholly in the great inteſtines (De Haen, *Rat. med.* vol. ii. p. 76.). Hence the vomiting of the fæces does not proceed from the *colon*. Morgagni alſo relates having obſerved ſmall collections of fæces in the upper part of the inteſtines (*Epiſt. anat. med.* xxxix. n. 29.).

† The dilatation of the ilium and colon ſeparates the opening of the valve of Bauhin, ſo that the fæces of the lower inteſtines are voided by vomiting. See Hagenott and De Haen, *Rat. med.* vol. ii. p. 71. & 72. But Hales aſſerts that this valve is overcome by the force of a clyſter, exper. 25. *Hemaſt.* n. 1. & 2. De Haen, p. 73. denies that this can happen in the living ſubject; nor is Morgagni diſpoſed to admit it. But, in another part of his works,

(par. iii. c. ii. p. 104.), it appears from De Haen himſelf, that in the living ſubject alſo it is overcome; which Van Swieten likewiſe affirms, when ſpeaking of the hydroſtatic inſtrument of Martini.

‡ *Prim. lin. phyſiol.* n. 738.

THE PROGNOSIS.

109. BOUND belly, when it is the effect of ſtrong bowels and great abſorption, creates no uneaſineſs, although no ſtool occur for ſix or eight days, or more. Otherwiſe it may induce great and ſerious inconvenience, as loathing of food, tenſion of the abdomen, anxiety, headach, vertigo, hemorrhoidal diſcharges and colics, enteritis, putrid fevers, and, laſtly, ileus itſelf. Nay, while a perſon endeavours with a great effort of his breath to evacuate his inteſtines, if he be young, he is ſometimes obſerved to be attacked with hemoptiſis, and if he be more advanced in life, or an old man, with apoplexy, in conſequence of the blood-veſſels of the brain burſting. Ileus is a diſeaſe of very doubtful iſſue, and full of danger. That which ariſes from inflammation or gangrene is always fatal; while that which ariſes from hernia is only ſometimes ſo, as, according to Garengeot, it is ſometimes cured. That which is occaſioned by hardened fæces, and other manifeſt cauſes, which can be eaſily removed, is attended with leſs danger. When fetid ſmelling or black matter is paſſed by the mouth, or when the higheſt debility, fetor of the mouth, ſmall pulſe, convulſions, coldneſs, and paleneſs are preſent, it is an indication that death is threatened. The vomiting

of fæces is generally conſidered as fatal. But Garengeot *, Bonet †, and Matthæus de Gradibus, mention inſtances to the contrary. Old men are generally carried off inſtantaneouſly; for they are frequently cut off during vomiting. A fatal inſtance of ileus, together with the anatomical diſſection, will be found in the *Commentaria de rebus in ſcientia naturali et medicina geſtis* ‡. If a diarrhœa ſupervene upon a ſevere iliac paſſion, the patient is carried off in a few hours, for it is a proof of univerſal ſphacelus having taken place; hence a diarrhœa is fatal ‖. The ſame thing is to be apprehended if a ſwelling of the belly come on, and a copious diſcharge of flatus take place §. If ſuppreſſion of the urine, ſtrangury, inflation of the belly, or convulſion ſupervene, the complaint is fatal ¶. Likewiſe red or livid ſpots, which ſometimes appear externally, denote that the inflammation of the inteſtines has terminated in gangrene **.

* *Mem. de l'acad. de chir.* vol. i. P. iii. p. 355.
† *Med. ſeptentr.* vol. i. lib. iii. ſect. xv. c. xxix. xxx. xxxii.
‡ Tom. xviii. p. 400. ‖ Felici *del preſag. med.* p. 164.
§ Baglivi *in Append. ad dyſenter.* ¶ *Id. ib.* l. i. c. xiii.
** Van Swieten, § 848.

THE CURE.

110. Binding or obſtruction of the bowels will be removed by thoſe remedies which are indicated by a knowledge of the cauſes (104. 105.). But as theſe have already been ſufficiently diſ-

cuſſed in former chapters, it is unneceſſary to repeat them here. Upon the whole, the patient will receive benefit from exerciſe; from friction of the abdominal region; from moiſt and glutinous food; from drinking copiouſly; from vegetables and coarſe bread; from occaſionally taking ſome honey, or manna, or caſſia, or ſome of the neutral ſalts; and from the frequent employment of clyſters. Redi, before meal-times, recommends a quarter of an ounce of the pulp of caſſia, until the bowels be relaxed. He likewiſe preſcribes the employment of ſallads made with vinegar, prepared with an infuſion of manna and ſenna. Gorter * preſcribes the *pilulæ gummoſæ*, ſome recommend thoſe of Becher, others the balſamic pills of Hoffman, or the Frankfort pills, and ſo forth. Likewiſe ſuppoſitories of ſalt butter, or *ſal gemmæ*, agaric, and colocynth received on honey, are advantageouſly introduced *per anum*, that the belly may be excited to action. It may likewiſe be opened by means of the bath; by ſteam †; by fomentations; by the ointment of the *arthanita major* applied to the umbilical region, which, in children, has been frequently obſerved to afford relief. An injection of the juice of beet is recommended by Petrus de Rotundis, to which he conſiders nothing as being ſuperior ‡. Some recommend walking with the bare feet upon a ſtone pavement ſprinkled with water; but this is not always unaccompanied

with danger. It will be neceſſary, however, in every caſe to conſider the cauſes.

* The *pilulæ gummoſæ* of Gorter are as follow:——R. Gumm. ammon. drach. ij. Sal. polychreſt. drach. ij. Gumm. ſagapen. drach. j. Diagryd. ſcrup. j. M. & c. s. q. balſ. peruv. ft. pilul. doſis ſcrup. unum quotidie.

† Hamilton (*De prax. regul. et febr. miliar.*) ſays, that for relaxing the belly, ſitting above the ſteam of warm water anſwers the purpoſe. Fomentations are recommended by Barbeyrack. *Med. form.* p. 339.

‡ *De vict. rat. in acut.* p. 119.

111. In ileus the motion of the inteſtines cannot be reſtored to its natural ſtandard but by removing the irritating cauſe, allaying the ſpaſm, and opening the bowels. To this part may be transferred moſt of the remedies already propoſed to allay vomiting (52.) and to remove pains of the inteſtines (101. 102.), for we muſt employ, both by the mouth and anus, laxative, emollient, and aperient remedies. Particularly clyſters, accommmodated to the cauſe of the diſeaſe, are preferred. If they require a ſtimulus, *ſal gemmæ* ought to be diſſolved in them, or a lenitive electuary, or honey of roſes. Internally the oily remedies elſewhere recommended may be employed. Van Swieten affirms, that in the moſt ſevere caſe of ileus linſeed-oil, taken to the extent of a pound, has repeatedly reſcued the patient from the jaws of death *. But as the vomiting is for the moſt part an impediment to the internal employment of remedies at the very beginning of

the diſeaſe, the *anti-emetic* remedy of Riverius, conſiſting of one or two ſcruples of ſalt of wormwood, and two or three ounces of lemon-juice, ought to be drunk off while in a ſtate of effervеſcence. To this ſaline mixture may be added, or in place of it may be ſubſtituted, the powder of columbo-root, which I have elſewhere recommended on the authority of White, Percival, and Johnſton †. Leack, in order to render it more bland, adds to it ſpermaceti and gum-arabic. It is neceſſary likewiſe to employ other mixtures, which, on account of their gratefulneſs and ſmell, rouſe the action of the ſtomach and general ſtrength, and to them may be added ſome of the ſedative and antiſpaſmodic remedies. They may therefore be prepared from the diſtilled waters of peppermint, citrons, orange-flowers, and cinnamon; from the *confectio alkermes*; from theriac; from diaſcordium; from laudanum; from the ſyrup of kermes, or of citron-peel.

* § 608. 609. † See concerning *Fevers*, Vol. II. par. 496.

112. We muſt inquire carefully, whether the complaint ariſes from hernia. In which caſe its replacement is immediately to be attempted *; and, if this do not ſucceed, we muſt quickly have recourſe to the operation for hernia †, which ought not to be put off beyond twenty-four hours. There is no occaſion for repeating what ought to be done when indurated fæces obſtruct the inteſtines, which has been elſewhere mentioned at greater length, eſpecially in par.

101. &c. I muſt not, however, paſs over in ſilence quickſilver and leaden drops, as remedies by which, it is aſſerted by people of the firſt celebrity and experience, that the bowels have been ſo frequently opened, in caſes of the moſt deſperate ileus. And, with regard to the quickſilver, ſome adviſe taking in a pound or two of it; while others are contented with half a pound. Thoſe practitioners, however, act moſt cautiouſly, who limit the quantity of it from an ounce to two, or ſometimes even four ounces. Blanchini is ſo averſe to the uſe of mercury, that he is unwilling to give more than one dram, or four ſcruples, every two hours, in volvulus. Likewiſe leaden drops, of the ſame weight, are recommended to be ſwallowed. For they are of opinion, that both remedies, by their weight, reſolve the indurated fæces, or intus-ſuſceptio of the inteſtines. But, that the remedy may act the more ſucceſsfully and gently, it is generally taken with a few ounces of oil of almonds. We muſt guard, however, againſt employing theſe in the ileus which ariſes from inflammation, or when gangrene is apprehended, as in an advanced ſtage of the diſeaſe, or in that which is kept up by incarcerated hernia; for in that caſe they will occaſion more harm than good. Ghiſi of Cremona obſerved two caſes of volvulus, in which three ounces of crude mercury had been given, but too late; and he found, in the dead body, part of the

ilium gangrenous and lacerated, through which the mercury, together with the fæces, had eſcaped into the cavity of the abdomen ‡. Moreover, we muſt take care that the mercury is not retained too long in the inteſtines, for there would be a danger of a ptyaliſm being occaſioned. Nor is it altogether ſafe to employ them in every caſe of intus-ſuſceptio; for, if the upper inteſtine be protruded into the lower, it is affirmed that no advantage can be derived from it. Sometimes the hardened fæces remain ſo faſt in the rectum, near the anus, that they can neither paſs on, nor admit the introduction of medicines to ſoften and evacuate them. In that caſe ſurgical aid becomes requiſite, and a proper inſtrument muſt be employed to divide and extract them.

* In the crural hernia, while it is replaced, the inteſtines ought to be forced obliquely towards the umbilical region. In the inguinal hernia, on the other hand, it ought to be forced obliquely towards the ilia. In old herniæ, when a conſiderable prolapſus of the inteſtines has taken place into the ſcrotum, where the ring is for the moſt part too lax, frequently the inteſtines cannot be replaced, on account of the accumulation of fæces. In that caſe nothing is better than the employment of acrid injections, and cathartics; which laſt may be employed at the very beginning of the complaint, before ſevere ſymptoms or inflammation come on. Epſom ſalt, to the extent of two ounces, diſſolved in a pint of water, and given at intervals, has produced ſurpriſing effects. The ſcybala are quickly diſſolved, the inteſtines replaced, and the belly relaxed. Likewiſe the perpendicular poſture, with the head turned downwards, and the feet elevated, contributes greatly to the reduction. It is generally ſufficient to reſt upon the back, with the head ſomewhat raiſed, and the ſhoulders depreſſed, the nates elevated, and the legs and knees being retracted. Emollient and antiphlogiſtic remedies, with veneſection, are recommended as be-

ing proper, by Gourſaud, in the *incarcerated*, *crural*, or *inguinal*, and *incomplete* hernia; becauſe the narrowneſs and nature of the parts occaſion a rapid inflammation: but the oppoſite of theſe in the habitual hernia and laxity of the ring. In the former caſe, bleeding ought to be quickly ſet about; in the latter, it may be frequently put off for ſome days without danger; for we have inſtances of their having been ſucceſsfully replaced, after eight or ten days, or even more, without inflammation and gangrene having been induced. In it alſo ſtrengthening remedies are likewiſe proper. Generally in the greateſt degree of relaxation theſe laſt are ſafer. When a quantity of air inflates the inteſtines, and occaſions a difficulty in the replacing of them, the application of ice may be tried; in other caſes it is hurtful. See *Mem. de l'acad. roy. de chir.* tom. xi. p. 411.

The cauſes of incarcerated hernia are various, and conſequently the method of cure muſt be varied according to the diverſity of theſe cauſes. It may be worth while to conſult a diſſertation entitled *Sur la difference des cauſes de l'etranglement dans les hernies, par* M. Gourſaud, to be found in the ſame work, p. 382.

† Concerning *celotomia*, or the operation for hernia, may be read the diſſertation of Louis, which is to be found in the ſame volume, p. 442. Whether *gaſtrotomia*, or the opening of the abdomen, can cure the iliac paſſion ariſing from intus-ſuſceptio of the inteſtines, is inquired by Heuin among the ancients, and, among the moderns, particularly by Barbetta and others; and he concludes in the negative. *Firſt*, Becauſe the cauſe of it is uncertain, and it cannot be aſcertained by unequivocal ſymptoms, which are in common to the other cauſes of the iliac paſſion. *Secondly*, Becauſe the cauſes are manifold, and intus-ſuſceptio is a leſs frequent one. *Thirdly*, Becauſe the operation is full of danger, and would frequently likewiſe be unneceſſary. *Fourthly*, Becauſe the place where the cauſe of the complaint exiſts cannot be determined. He has the concurrence of Saviard *(Obſ. chir.* 34.), and Van Swieten (§ 964.). See tom. xi. *Des mem. de l'acad. roy. de chir.* p. 315.

† Lett. v. *Intorno alle feb. malig.* p. 240.

‡ *Letter. mediche*, let. i. p. 65.

113. Moreover, in ileus the remedy of moſt immediate ſervice is ſaid to be the ſmoke of to-

bacco injected *per anum* * ; in place of which, if I miſtake not, may be equally well ſubſtituted, an injection of the decoction or infuſion of it, which I have already recommended in the colic pain (101.). Some even propoſe forcing air by means of a bellows into the inteſtines, to remove the complications of them. After other remedies have been tried to no purpoſe, the belly has ſometimes been relaxed by ſuddenly throwing cold water upon the feet, legs, and bare belly : for many things, as Home, after Celſus, affirms, in a dangerous caſe, are attempted with propriety, which otherwiſe ought to be omitted. But it is ſafer to employ the tepid bath. Hazon, in the caſe of a pregnant woman, after trying all other remedies to no purpoſe, cured a moſt ſevere ileus by the repeated uſe of the tepid bath, in conſequence of which the fœtus was brought forth, and the woman freed from her complaint. Twice a-day before the abortion, and once after it, ſhe had recourſe to the bath †. Laſtly, tepid water was gently and gradually thrown into the inteſtines by means of a ſyringe. It has been frequently known to allay ileus, as we are aſſured by De Haën and Videmari. But the employment of it ſeems now to be laid aſide ; which, had it been found to be uſeful, doubtleſs would not have happened ſo readily. Sydenham, for the removal of an ileus, ordered the patient to lie with a living whelp cloſe to the naked belly for two or three days. Upon the bowels being

opened, and the vomiting and other ſymptoms diſappearing, we muſt not too ſoon deſiſt from the remedies, nor depart from the thin and fluid diet, or neglect the prophylactic precautions; for the diſeaſe is very apt to return.

* An inſtrument is deſcribed by De Haen and Schaeffer; but a ſtill more ſimple one by Gaubius, in his *Adverſaria*, p. 45.

† Vandermonde, tom. iv. Jan. 1756, p. 110.

CHAPTER IX.

CONCERNING MORBID STATES OF THE HEMORRHOIDAL VEINS.

114. THE rectum is liable to certain morbid conditions which proceed from the hemorrhoidal veins. Theſe veins are either *internal*, or ſuperior; or *external*, or inferior. The former flow into the *meſenteric branch*, and afterwards into the *vena porta*, the latter into the *hypogaſtric branch* of the *vena cava*, into which hypogaſtric branch, or *internal iliac*, likewiſe the *vena pudenda*, and other veins from the neighbouring parts flow. It is to be remarked, however, that theſe veins, both internal and external, as Winſlow has ſhewn, have a wonderful communication by anaſtomoſes.

115. According as the blood returning through theſe veins differs in its condition, various morbid ſtates take place in them; the two principal,

however, are ſwelling and pain in them, or a various, and frequently immoderate diſcharge of blood from them. Hence flow the varieties of the piles. They are either *internal* or *external*, *blind* or *ſhut*; as alſo *painful* or *raging*, *open* or *flowing*. The flowing piles are diſtinguiſhed into *ſpontaneous*,—which open, by a provident effort of nature, to free the ſyſtem of a ſuperfluous quantity of blood, as happens in the menſtrual diſcharge,—and into *not ſpontaneous*, which depend on a morbid condition. Theſe laſt, again, are divided into *critical*,—which pour out blood, proving ſalutary to the patient;—and into *ſymptomatic*, which are the reverſe. The *blind* piles, according to the ſize and figure which they aſſume, are named, ſome *ſmall*, ſome *great*, as alſo *verrucales* and *veſicales*, reſembling grapes or mulberries: and, laſtly, from the badneſs or benignneſs of their diſpoſition, they are called *malignant*, *cancerous*, and *gangrenous*, or *mild* and *benign*.

116. The proximate cauſe of the *blind* piles is the ſtagnation of blood in the hemorrhoidal veins; that of the *flowing* piles is the ſame as that of other hemorrhages. The remote cauſes are conſidered as being, chiefly, plethora; bad-conditioned fluids; a peculiar acrimony; a hypochondriacal and melancholic temperament; compreſſion, internally or externally, of the veins themſelves, from a ſpaſm, or from obſtruction of the viſcera,—eſpecially of the vaſcular ſyſtem,

both of the meſenteric veins and of the vena porta,—from the gravid uterus, from difficult labour, from indurated fæces, or from their containing foreign matters, from contraction of the rectum falling down through the ſphincter; exceſſive relaxation of the veins, whether from external violence or exiſting naturally, and as it were proceeding from hereditary diſpoſition; the abſence of the powers which promote the return of the blood through the veins; retention of the fæces; the body continuing too long in the erect poſture; ſuppreſſion of natural or cuſtomary evacuations; the irritation of ſome dyſenteric acrimony; a critical effort of the ſyſtem; depravation of the mucus; any irritation occaſioned by cathartics, whether containing rhubarb or aloes *; venereal, aromatic, and vinous remedies; diſeaſes of the vagina and bladder; and the frequent application of leeches.

* Lange (*Miſcel. verit.* faſcic. i. p. 8.) obſerves: "Aloes excite the piles. Now, the ſame ſubſtance proves fatal to cats, wolves, dogs, foxes, and birds. It muſt therefore be claſſed among the vegetable poiſons. Its uſe, then, ought to be thrown aſide."

THE DIAGNOSIS.

117. THE *external* piles are obvious to the ſight; the *internal*, again, are diſcovered by means of a probe, or by introducing the finger into the anus. The blind piles are dilated into ſmall tumours, like varices; ſometimes they equal

the ſize of a cheſnut, or even that of a pigeon's egg; at other times the whole ring of the anus appears ſwelled and unequal; ſometimes the extremity of the rectum is ſo turned out as to reſemble the nates of an ape. They muſt be diſtinguiſhed from *rhagades*, *thymi*, *condylomata*, *fici*, and *criſtæ* *. The true piles reſemble the heads of veins, are for the moſt part black, or intenſely red, or round, and affect the veins otherwiſe from what happens in the morbid ſtates already mentioned. In the flowing piles, the blood paſſed is diſtinguiſhed from other hemorrhages of the bowels, by its being poured out in conſequence of the preſſure of the fæces, for the moſt part following the diſcharge of fæces, but ſometimes, indeed, preceding it a little before.

* *Rhagades* are fiſſures about the anus. *Condylomata* are hard pellicles, or the indurated rugæ of the anus, oblong, of an uniform colour, and not reaching to the veins. *Thymi* are fleſhy tubercles, of a white or red colour, but without pain. Likewiſe, *fici* are tubercles larger than thymi, of a livid colour, and painful, and differ from the piles in being fleſhy. Laſtly, *criſtæ* reſemble the creſts of a cock's comb.

118. They generally affect pale, melancholic, and hypochondriacal people. When they threaten an attack, a pain, generally affecting the os ſacrum, accompanied with a particular itching at the anus, or rectum, is felt; more frequently, however, accompanied with a *teneſmus*, and an uneaſy ſolicitation to go to ſtool, although the fæces be neither hard, nor come off with difficulty. In ſome patients they are leſs, in others more ſevere,

nor do they remit of their violence, unleſs blood be drawn. Frequently loſs of appetite, a conſtant pain, particularly diſtreſſing when the patient is at ſtool, vertigo, headach, and ſometimes fever, ſupervene.

THE PROGNOSIS.

119. The *blind piles* are either reſolved, or become indurated, or, in conſequence of inflammation being ſuperinduced, terminate in abſceſs. When a ſmall quantity of bloody pus is diſcharged from them, generally a detumeſcence of them eaſily, but gradually, takes place, without any other bad conſequence. But, if the ſuppuration be ſevere, it frequently leaves a fiſtula; in the ſame manner as thoſe of old ſtanding, or which have been much irritated, frequently terminate in ulcers, and other bad conſequences. In children and young people, the diſcharge of them denotes a weakly condition, and, as in ſuch ſubjects it is eaſily checked, it paves the way to chronic complaints. When it occurs after the thirtieth year of life, and returns at ſtated periods, it is of more favourable omen. It is extremely ſalutary when it happens in a plethoric habit, otherwiſe in good health; laſtly, when it recurs at ſtated periods about the fiftieth or ſixtieth year of life. If in ſuch perſons it be ſuppreſſed, very alarming diſeaſes ſuddenly come on. But, if it be immoderate, it uſually induces cachexy, dropſy, and conſumption. In ſevere

diſeaſes, if the diſcharge be unuſually copious, and alleviate or remove the diſeaſe, it proves *critical;* but the *ſymptomatic piles* indicate the contrary. If, inſtead of blood, they pour out mucus, or white or ichorous ſerum, it denotes relaxation and obſtruction of the glands; ſtraitening of the inteſtines; or ulcers, ſcirrhus, cancers, and fiſtula.

120. The *flowing piles* chiefly remove plethora and bad-conditioned fluids. Hence Hippocrates obſerves: "Thoſe who are afflicted with piles, are attacked neither with pleuriſy, nor peripneumony, nor phagedenic ulcers, nor furunculi, nor termintha *, nor, probably, with lepra, nor other diſeaſes †.—When the hemorrhoidal diſcharge occurs in melancholic and nephritic patients, it is a favourable ſymptom ‡.—If varices, or the hemorrhoidal flux, attack people labouring under inſania, the complaint is reſolved ‖." Galen ſays, that "melancholia and nephritis are cured by the piles," as evacuating the groſſer part of the blood. Likewiſe, in the *Goacæ Prænotiones* it is written: "The piles ſupervening in apoplectic perſons is ſalutary §.—When a ſuppreſſion of the expectoration takes place in phthiſical perſons, it induces madneſs; and, in ſuch a caſe, the piles appearing affords a favourable ſymptom ¶."

* *Termintha* are blackiſh-green tumours, reſembling the fruit of the turpentine-tree.

† Lib. vi. epid. ſect. iii. text. xxviii. and lib. *De humorib.*

‡ Aph. xi. ſect. vi. || Aph. xxi. ſame ſect. § *Coac.* n. 478. ¶ *Ibid.* n. 437.

THE CURE.

121. In the *blind*, *painful*, and *inflamed* piles, opening a vein in the arm, or even in the foot, as well as the application of leeches, affords relief. If obſtinate ſwelling be preſent, it may even be proper to open the piles. They muſt be ſoftened, however, by means of an emollient, anodyne, reſolving fomentation; by a cataplaſm, or liniment. Lange affirms, that the pain may be relieved by pottage made of tart apples and red wine boiled together, and applied by means of a linen rag at different times to the anus *. The flowers of boiled mullein, elder-leaves, boiled to a pulp, or bruiſed, and frequently applied, are recommended by Riverius. An excellent liniment is compoſed of the juice of the *ſemper vivum*, or purſlane, and butter. Horſt, and ſeveral others, warmly recommend an ointment of flax-weed, which is prepared from the leaves and flowers of the flax-weed boiled in hog's lard, and expreſſed with the addition of the yolk of an egg. Nor muſt the *unguentum populeum nutritum*, linſeed-oil, the milk of cocoa, and the oil of the yolks of eggs, &c. be deprived of their praiſe. Likewiſe the bowels muſt be kept open by means of injections, clyſters, cathartics of caſſia and manna, or ſome neutral ſalt. The flowers of ſulphur, given in the pulp of caſſia, are ſaid to open the

blind piles, and to ſtop the diſcharge when immoderate.

* *Miſcel. veritat.* faſcic. i. p. 7.

122. The hemorrhoidal diſcharge, when immoderate, is allayed by veneſection, by a decoction of tamarinds or prunes, of the urtica mortua, of ſorrel, of the green bark of oranges, of ſimarouba; the powder of myrobolans; tablets of amber; pills of bdellium, flowers of ſulphur, with flowers of caſſia, the fungus melitenſis, corals; terra ſigillata; applying externally mineral acids and aſtringents, ſuch as I have recommended in Vol. IV. Chap. XII. in *Epiſtaxis*. But, when the hemorrhoidal flux is habitual, we muſt guard againſt ſtopping it intirely. For the piles are generally by ſurgeons improperly cauteriſed, and checked by other remedies. But Hippocrates obſerves: "When a perſon is cured of a long-continued hemorrhoidal diſcharge, if the bowels be not at the ſame time kept open, that there is a danger of dropſy or tabes coming on *." If the uſual evacuation of piles has been ſuppreſſed, it may be recalled by opening a vein of the foot, by pills of aloes, myrrh, and ſaffron; by fomentations applied to the anus; by the vapour of warm water; by rubbing on them fig-leaves; by the internal uſe of ſteel, and the like.

* Aph. xii. ſect. vi.

123. According to the variety of the cauſes by which the piles are excited, ſometimes aperients, at other times correctives, and ſometimes ſapona-

ceous or ſtrengthening remedies, are indicated. Hence neutral ſalts; the juice of ſuccory, agrimony, noſe-ſmart, borage, fumitory, trifoil, milfoil, and plantain; ſteel; whey, or milk itſelf, if nouriſhment be required, are recommended. Laſtly, the mineral waters are moſt efficacious for waſhing all impurities out of the body. The food ought to be of a bland kind; nor are acrid or aromatic ſubſtances admiſſible. Violent exerciſe both of body and mind ought to be avoided.

CHAPTER X.

CONCERNING WORMS OF THE INTESTINES.

124. THERE is ſcarcely a part of the human frame in which worms have not either been found, or alleged to exiſt. But they are moſt frequently ſituate in the inteſtines; and are very various in kind and ſize. The principal kinds of them are, the *lumbrici*; *aſcarides*; *cucurbitini*; and the *broad worm*, which alſo has the name of *tænia*, *ſolium*, and *vermis ſolitarius*, becauſe it has been ſuppoſed, though improperly, that ſeveral of them do not neſtle together in the inteſtines. The *lumbrici*, which are generally ſituate in the ſmall inteſtines, are tapering, of a white colour, ſometimes duſky, and from ſix or eight inches, to a foot, or two feet long; in ſi-

gure reſembling earth-worms, but, in point of ſtructure, ſlowneſs, and hardneſs, very different from them. The *aſcarides* are tapering, and likewiſe white, but very ſmall, the larger ones ſcarcely exceeding half an inch in length; very like the mites growing in cheeſe, and for the moſt part confined only to the rectum. They differ from the mites, on account of undergoing no change; and from the lumbrici in being very ſmall and numerous *.

* See Van Phels. *Hiſt. phyſ. aſcarid.* Leovard. 1768.

125. The *cucurbitini* in ſome meaſure reſemble the ſeed of the gourd, or rather cucumber: whence their name. They are ſuppoſed generally to neſtle in the large inteſtines, and are frequently paſſed mixed with the fæces. Luſitanus and Loulet named them *aſcarides*. Valliſner was of opinion that the broad worm, or tænia, ariſes from their being joined together, and diſpoſed longitudinally. This is denied, however, by modern authors, who confeſs, notwithſtanding that the tæniæ, which they name the *cucurbitinæ* of Pallas and Plater, and the *cucurbitinæ articulis longioribus* of Bonet, frequently caſts their old articulations at the extremity, and they paſs into living and moving cucurbitini; which I myſelf have more than once had an opportunity of obſerving. The cucurbitini are familiar to the Germans, to the inhabitants of the Netherlands, and to others of the inhabitants of Europe.

126. Be this as it may, the tænia is a broad

worm, with diſtinct joints, frequently ten, twenty, thirty, and even a greater number of feet in length. Several ſpecies are deſcribed by phyſicians, beſides the one which appears to be formed by the junction of the cucurbitini, which was mentioned in par. 125. Two others, in particular, are deſerving of notice, namely, the *tænia capitata*, which is found to be particularly hoſtile to the inhabitants of Switzerland, and to quadrupeds; and the *tænia acephala*, or *non capitata*, both of which conſiſt of ſmaller joints, but conſtitute one ſingle worm, as appears from diſſection, from the examination of them by means of a microſcope, and from injecting them. They are ſaid to lurk chiefly in the ſmall inteſtines, but have frequently been diſcovered in other parts of the canal beſides. Whoever is deſirous of fuller information concerning the *tæniæ*, may conſult Valliſner, Plater *, Hildanus, Le Clerc †, Andry, Raullin, Gontard, Linnæus ‡, Vogel ‖, Bonet §, and other naturaliſts.

* The *tænia prima artic. min.* of Plater, and the *tænia ſecunda*, or *vermis cucurbitinus* of the ſame. See *Prax. med.* Plater.

† The *tænia prima* of Le Clerc. *Hiſt. des vers* pl. v. f. 1. pl. vi. f. 2. pl. vii. f. 1. pl. ii. f. 1. 2. 4. The *tænia ſecunda* of the ſame kind. *Ibid.* pl. i. A. and pl. ii. &c.

‡ *Syſtem. natur.* The *tænia vulgaris*, and *tænia lata*; the *tænia oſculis marginalibus ſolitariis*, &c.

‖ *De cognoſc. et curand. hum. corp. affect.* The *capitata & acephala*; and the *tænia cucurbitina* of the ſame.

§ *Mem. preſent. a l'acad. des ſcienc.* T. i. *Tænia a anneaux courts*; and the *tænia a anneaux longs*. Likewiſe the *tænia*, or *ſolium a epines et anneaux* of Andry; and the *ſolium ſans epines* of the ſame. Likewiſe the *lumbricus latus* of Tyſon. *Engl. Philoſ. tranſ.* an. 1683, n. 146. &c.

127. Beſides theſe kinds of worms, there is likewiſe found in the inteſtines of men the *faſciola*, —which is not articulated, but thicker and fuller than the tænia itſelf,—and the *trichuris*, namely, a very ſlender thin worm, of a ſhining pellucid appearance, of a round taper body ſeven lines long, and with a thread-like proboſcis fifteen lines long. It for the moſt part infeſts the *rectum* and *cæcum*, and ſometimes alſo the ſtomach. The deſcription of them may be found in Roederer * and Wagler †, and alſo in Fabrici, who names them *lumbricelli aciculares*. But there are many other worms beſides, and their varieties are deſcribed by medical writers in rare caſes, namely, *black*, *green*, *red*, *hairy*, *cornuted*, and poſſeſſing ſingular heads, hideouſly ugly in various reſpects ‡.

* *Goett. Gel.* anz. 1761, n. 25. † *Diſſert. de morb. mucoſ. &c.*

‡ Paullus Lupius obſerved a particular ſpecies of worms, named *podura datiſca* of Linnæus, of which mention is made in the *Italian Journal*, *Avviſi lulla ſalute umana*, ann. 1780. In the ſame *Journal*, publiſhed at Florence by Targioni, ann. 1782, n. 50. more information concerning them will be found. Roſenſtein alſo ought to be conſulted. *Malad. des enfans*, &c.

128. Phyſicians and philoſophers have long contended concerning the origin of worms in the human body. Nor have they hitherto drawn any certain concluſion. But the kind of worms named *lumbrici*, the like of which have no where elſe been detected, and their frequent occurrence at every time of life, and in both ſexes, not even with the exception of newly-born children, and

thoſe at the breaſt, nay, the fœtus itſelf, in which Hippocrates has ſhewn, that broad worms have ſometimes been found *, ſeems to favour the opinion of thoſe who imagine that theſe animalcules are generated in the body. Whether or not the ſame may be affirmed of the *aſcarides*, of the *cucurbitini*, and of the *tæniæ*, it is not eaſy to tell. This only ſeems confirmed by experience, that ſome things favour the generation and propagation of them, that other things irritate and excite their fury, ſo that either from their number, and from their conſumption of chyle, or from the bad exhalations and excrements proceeding from them, or from their pricking or irritating the inteſtines, they occaſion no ſmall miſchief. The generation of them is promoted by all thoſe things which afford them a proper nidus, or aliment, as viſcid and farinaceous legumina; the abuſe of animal food; fruit; milk, and articles prepared with it; a weak and lax habit of body; moiſt and warm air; living in marſhy ſituations; the drinking of impure water; ſluggiſh bile; and ſimilar cauſes; in conſequence of which viſcidity is collected more copiouſly in the inteſtines. Among theſe alſo may be enumerated, ſweet articles, and things prepared with ſugar; but Redi has obſerved them, particularly the lumbrici, writhe themſelves, and convulſed, in conſequence of ſweet and acid juices being poured upon them.

* Lib. iv. *De morb.* xxvii. n. 2.

THE DIAGNOSIS.

129. No age, as I have already ſaid, appears to be exempt from worms; but leaſt of all infancy and childhood, in which we may therefore always ſuſpect the preſence of worms. But infants and children are much more frequently diſtreſſed with *aſcarides* and *lumbrici*; men with *cucurbitini* and *tæniæ*, and ſometimes alſo with *faſciolæ* and *trichurides*, but women ſtill more frequently than men; ſo that every period of life is liable to ſome of thoſe ſpecies of worms. Worms for the moſt part lurk in the ſyſtem without betraying themſelves by ſufficiently certain marks. For the ſymptoms are generally either obſcure or equivocal, as various and different cauſes frequently occaſion the ſame effects, or deceive us with a ſimilarity of appearance. For it not unfrequently has happened, that worms have been found when no ſuſpicion of them had been entertained; or that they have been altogether abſent when many ſymptoms ſeemed to indicate their preſence; which laſt fact has been confirmed by two caſes adduced by Tode *. Therefore, the paſſing of worms by the mouth or anus is the only thing which removes all doubt in the caſe of an ambiguous diagnoſis.

* *Collect. ſoc. med. Haunien.* p. 21.

130. It may be obſerved in general, however, that perſons afflicted with worms are for the moſt part languid, and affected with naufea; ſometimes,

likewiſe, that they have a morbid appetite, though their body at the ſame time receives no nouriſhment, but pines away; that an acid exhalation is emitted from the mouth; that they are occaſionally haraſſed with a ſlight dry cough; that they are apt to be attacked with fainting; that they are bedewed with a cold ſweat; that the colour of their face varies, being ſometimes paliſh, ſometimes red, but moſt frequently pale; that a dilatation of the pupil, or *mydriaſis*, happens*; that a more copious diſcharge of ſaliva takes place; that they are diſtreſſed with conſiderable thirſt; that they are frequently convulſed, eſpecially infants and children; that they are diſtreſſed with alarming dreams; that they grind their teeth; that they frequently attempt to ſwallow as it were a bolus ſticking in the throat; that they turn round upon the belly, which is for the moſt part ſwelled and tenſe; that they are diſtreſſed with colic pains, or cardialgia, or a ſenſe of gnawing about the umbilicus, which is denoted by the complaints and writhings of the patients, and their applying their hand to the belly; that ſometimes they are more affected when faſting, and relieved upon taking food; that the belly is ſometimes bound, ſometimes looſe; that aſh-coloured, whitiſh, or green ſtools, generally emitting an acid ſmell, are paſſed; that they are ſubject to a very troubleſome itching of the noſe, and occaſional dropping of blood from it; and that they are affected with ſhifting fevers. Baglivi ſuppoſes,

that a very ſmall pulſe, and hiccup, in children always denote the preſence of worms †. The pulſe is generally irregular, obſcure, and deficient. To theſe ſymptoms others add, tremors, the cynical ſpaſm, contortions of the eyes, and fluſhing of the cheeks. Rhan informs us, that mydriaſis is frequently a ſymptom of worms in the inteſtines ‡. But Cocchi remarks, that ſometimes almoſt all the ſymptoms of the hypochondriac affection are induced by worms. In a particular epidemic fever, which Lepecqui de la Cloture named the *putrida verminoſa* and *maligna*, and which was of the nature of the *gaſtrico-putrida verminoſa*, he obſerved as a particular ſymptom the gnawing ſenſation of the ſtomach §.

* Rhan, *Diſſert. de viſc. abdom.* 1771, p. 20.

† *Giornale di med. di Venez.* 1774, p. 217. ‡ L. c.

‖ *Bagni di Piſa*, p. 228. § *Obſerv. ſur les maladies epidemiq.* p. 91. See Vol. I. *Of Fever*, par. 386.

131. In ſhort, there is ſcarce a ſymptom ſo ſevere which may not occaſionally be excited by worms in the inteſtines. Boerhaave has obſerved them to give riſe to acute, ſlow, hectic, malignant, putrid, epidemic fevers; to the fames canina, bulimia, deep ſleep, and delirium: Bartholin to nauſea, vomiting, and dyſentery: Paracelſus to phrenitis: Marcellus Donatus and Schenck to catalepſy: Foreſt to aphonia: Luſitanus, Gruelling, Rhodius, and Moebius, have obſerved epilepſy; which likewiſe Fabius Columna

did in himſelf: Riverius, Hoffman, and Ludwig have obſerved violent and irregular fevers, ſyncope, a ſenſe of ſuffocation, and mania, proceed from them: Moreali, and before him Ettmuller, putrid, contagious, and epidemic fevers: Tozzi, palpitations, headachs, vertigos, blindneſs, cough, and hiccup: Lieutaud, ileus and volvulus: Hoffman and myſelf, and all practitioners, eſpecially Vogel, Schultze, Van Doevern, Störck, &c. pleuriſy, iſchuria, and perforation of the ſtomach and inteſtines *. In a maniac, who before his death vomited a quantity of lumbrici, Ludwig found three large *lumbrici teretes* dead, incloſed in the gall-bladder †. Lieutaud, likewiſe ‡, in the body of a boy who had died of an acute fever, found a long lumbricus, by which the ductus choledochus was obſtructed. It appeared to have been carried thither from the gall-bladder. The ſame author relates ‖, what appears to be more ſurpriſing, that he found, in the body of a woman who had died of a malignant fever, a lumbricus which had in like manner been forced into the pancreatic duct, and evidently obſtructed it. In another boy he found the ilium, about its extremity, ſhut intirely up by a collection of lumbrici as large as the fiſt §.

* An inſtance of the inteſtines being perforated by worms may be found in the *Journ. de med.* Jun. 1782, p. 551.

† *Comment. de reb. in ſcient. nat. et med. geſt.* vol. xiv. p. 664.

‡ *Hiſt. anat. med.* vol. i. p. 211. ‖ L. c. p. 248.

§ L. c. p. 75.

132. The ſymptoms which in a peculiar manner ſeem to indicate the preſence of the *cucurbitini* and *tæniæ*, are, a *gnawing* about the ſtomach, or a frequent and uneaſy ſenſation of a living animal moving within; inflations of the abdomen, which ſubſide, and afterwards return; increaſed appetite; remarkable diminution of the ſtrength; emaciation; a lead or yellow colour of the face; fainting-fits; dimneſs of ſight, and watering of the eyes *; giddineſs, accompanied with falling; tottering of the legs; and certain abraſions, like gourd or cucumber ſeeds, which are ſometimes voided with the fæces †. In ſome patients there occurs an interruption of the voice, accompanied with a copious ptyaliſm, and pains of the ſtomach ‡. Theſe worms for the moſt part affect perſons living in marſhy ſituations, and uſing impure water and bad aliment. The aſcarides are chiefly indicated by an itching about the anus, by frequent looſeneſs, and by the fetor of the ſtools. They are equally hoſtile to adults and children. Hippocrates has even found them in the fœtus. In women they frequently paſs into the vulva, and excite an intolerable itching there. They then not only appear in the fæces, but alſo in the urine. Couſini ‡ mentions, that a ſoldier paſſed through the urethra a worm of the taper kind, eight inches long, and that he had been accuſtomed for ſeveral years back to paſs many ſuch. Do they paſs from the inteſtines by any communication preternaturally form-

ed with the ureters? We have ſeen, in dead bodies, that worms have formed for themſelves a paſſage from the œſophagus into the cavity of the thorax, through a hole in the abdominal cavity. In a girl of ten years of age, all of whoſe viſcera were perfectly ſound, but who had been ſuffocated by worms, Haller found the mouth and fauces filled with lumbrici, and two of the taper kind in the aſpera arteria, at the ſeat of the heart, in the beginning of the lungs §.

* In the *Journ. de med.* for July 1783, tom. xi. p. 22. a caſe, in which a tænia and worms accompanied St Vitus's dance, is recorded. It is as follows: "A girl of nine years of age, for eight days was diſtreſſed day and night with continual and inordinate motions in the arms and legs. She ſpoke with difficulty, in conſequence of her tongue being as it were held. She was collected in her mind. She walked in a ridiculous manner, dragging one foot after another. She with difficulty, and not until after making various motions, applied a cup to her mouth, and then drank with precipitation. Her eyes watered, and were in continual motion; and her mouth was variouſly diſtorted. Her reſpiration was free; her pulſe ſmall, quick, and irregular; ſhe had great thirſt: her urine was watery, and her belly ſwelled. She had a conſtant pain about the umbilicus; her ſtools were ſoft and mucous, and of a clay colour; her face pale, and her body emaciated, although for ſix months ſhe had been haraſſed with an immoderate and inſatiable craving for food. The watering of the eyes, emaciation, ſwelling of the belly, pain about the umbilicus, and the nature of the excrements, indicated worms. After premiſing a clyſter of a decoction of rich figs, next morning was adminiſtered a medicine, compoſed of four ounces of the infuſion of helminthochortus, two ounces of oleum ricini, and an ounce of the ſyrup of walnut-flowers. Four ſtools took place, accompanied with the diſcharge of five lumbrici, of various ſizes. Next day the remedy was repeated, premiſed by four grains of ſweet mercury, and twelve grains of rhubarb. Eight ſtools were occaſioned, and a tænia was paſſed, five feet and a half long. Shortly all the ſymptoms diſappeared, and the patient began to get

well. By the employment of wine and bark, she quickly recovered her former complexion and condition of body."

† Hippocr. *De morb.* iv. n. 27. 39. ‡ *Ibid.* n. 40.

‖ *Act. Helvet.* vol. viii. p. 192. § *Opusc. path.* obs. ix.

THE PROGNOSIS.

133. The ascarides are free of danger, and most successfully treated. When neglected, however, they may induce tenesmus and inflammation, or ulceration of the rectum. This is not the case with the lumbrici and taeniæ; for in them greater difficulty often occurs, and the life itself is in danger. The white kind are attended with more difficulty and danger than the black or brown. When worms are conjoined with other diseases, the discharge of them denotes the greatest putrefaction, which they seem to shun. But frequently they are passed along with the excrements when the disease is drawing to a crisis; in which case, according to Hippocrates *, they afford a favourable symptom.

* *Prænot.* 72. *Coac.* 601. *De judicat.* v.

THE CURE.

134. In the cure the indications are, the destroying and expelling of the worms; the deranging of their nests; the alleviating of the symptoms, and the removing of the causes by which they are kept up. Oily things in particular, bitters, and preparations of opium, induce stupor in the worms, alleviate the symptoms, and prepare

the way for their expulſion. The ſtrong-ſmelling gums, and ſaline ſubſtances, not only deſtroy the viſcid colluvies in which they are produced and grow, but likewiſe expel the worms themſelves. It is ſaid that they are deſtroyed by oily and acid things, both of the vegetable and mineral * kingdoms, and by ſweet ſubſtances; but we are as yet unacquainted with any remedy which certainly deſtroys them. They are expelled by emetics and cathartics †, and clyſters, particularly of milk and ſugar, when lulled, or killed, or rendered languid by anthelminthics, as was Plenck's practice. Among theſe are recommended, jalap, diagrydium, ſweet mercury, aloes, rhubarb, conſerve of worm-flowers, or compounds of theſe. Boys agree better with the ſyrup of ſuccory with rhubarb, or of walnut-flowers, or troches of rhubarb. Among theſe likewiſe the belly is advantageouſly anointed with tanſy-oil, with the ointment of the arthanita major, or with hepatic aloes and myrrh, beat up with cow's gall, which proves gently laxative.

* See Vol. II. par. 301. & 402.

† Dianyere, *Journ. de* M. Vandermonde, vol. v. Octob. 1756.

135. For deſtroying and expelling worms, the beſt remedies are, the *ſemen ſantonici*; corraline; the tops of tanſy and hypericum; goats-rue, or *galega*; garden-rue; wormwood; valerian-root; that of the *filix mas*, and graſs; burnt hartſhorn, or hartſhorn ſhavings; pulveriſed egg-ſhells;

aſſafœtida; myrrh; petroleum; the oil of the hypericum Matthioli; ſulphuric acid; ſalt of ſteel; camphor; æthiops mineral; the powder of ſulphur, or the ſame burnt and immerſed in wine. Tode greatly extols tartar-emetic and the emetic wine, by the employment of which, he affirms having obſerved worms paſſed in two hundred caſes †. Before him Brouzet had recommended the ſame remedy ‡. Some alſo recommend water into which one or two pounds of melted lead have been thrown ‖. But there is a riſk of the water impregnated with arſenical vapours doing harm to the patient §. Formerly, likewiſe, water in which quickſilver had been violently agitated for a long time, or even quickſilver itſelf, were highly eſteemed; at preſent, however, their anthelminthic powers are queſtioned ¶. But water impregnated with much ſalt has been recommended by myſelf ** and Leigh †† with good reaſon.

* See the obſervations delivered above, concerning the colic pains induced by preparations of lead.

† *Collect. ſoc. med. Haunien.* vol. i. p. 21.

‡ *Com. de reb. in ſcient. nat. et med. geſt.* vol. iv. p. 487.

‖ *Gazzet. med. d'Oltremonti*, an. 1762, n. 16.

¶ The author, in a treatiſe entitled, *De anthelminthica argenti vivi facultate*, publiſhed at Fayence, an. 1753, has ſhewn that quickſilver poſſeſſes no anthelminthic power. He afterwards confirmed this by the æthiops mineral, and likewiſe by mercurial ointment, in conſequence of having entered upon another ſet of experiments, which are ſtill to be found among his unpubliſhed writings. See Vol. II. *Of Fevers*, par. 402. [*Germ. Editor.*]

** *Trattato delle acque ſ.* Criſtoforo, Faenza, 1761.

†† *Opuſcoli med. pratiq. di* Targioni, vol. iv. p. 115.

136. Sometimes alſo the tæniæ yield to theſe and ſimilar remedies. Generally, however, they more obſtinately reſiſt them. The *Edinburgh Tranſactions* recommend, as a ſpecific in the cure of worms, tin filings, mixed with nearly eight times the quantity of brown ſugar. They recommend ſix drams to be taken the firſt day, three the ſecond, and the like quantity on the third day; and upon the fourth the belly is to be purged with a cathartic. Others recommend purſlane, the oil expreſſed from nuts, and drunk with white wine †. Likewiſe ſix grains of the ſalt of ſteel, mixed with the extract of tanſy, and reduced to a bolus ‡, are recommended. But we ourſelves know certainly, that both tin, and ſalt of ſteel, in the ſame manner as ſtrong-ſmelling remedies, and other ſalts and bitters, have frequently been of no avail ‖. Rathier aſſerts, that the tænia is moſt powerfully expelled by the following remedy §.——R. *Pulv. ſabinæ* gr. xx. *Sem. rutæ* gut. xv. *Mercur. dulc.* gr. x. *Ol. tanaceti* gutt. xij. *Syrup. flor. perſ.* q. s. M. F. *bolus. Cujus dimidia pars detur mane; altera veſperi; et deſuper hauriatur cyathus vini, in quo nuclei perſicorum per* hor. xij. *fuerint macerati.* Biſſet alſo, after trying remedies to no purpoſe, found gum-gutta, or gamboge, to be efficacious, and as it were ſpecific; of which he adminiſtered fifteen grains, with the extract of gentian, in the form

of a pill, for one doſe §. There is a ſimilarity between this remedy and the one which was publiſhed at Paris by the King's order, the ſecret of which was diſcloſed for a great reward by a widow woman from Switzerland, of the name of Nouffer, who had been long celebrated for the cure of *tæniæ* ¶. Its principal components are, the root of the *filix mas*, the *panacea mercurialis*, the *reſin of ſcammony*, and *gum-gutta*. The firſt of theſe, however, is the ſafer, and equally efficacious **. Likewiſe the *arcanum* of Herrenſchwand, as we are informed by Vogel ††, conſiſts of *gum-gutta*, *ſalt of wormwood*, and the *charcoal of aſh-tree*. Vogel himſelf ſays, that he has found nothing more powerful in the removal of *tæniæ*, than pulveriſed fennel-root, given for ſome days, morning and evening, to the extent of a ſcruple, or half a dram, with about three grains of gum-gutta. Generally the more powerful cathartics are recommended for the expulſion of the *tæniæ*, as colocynth, ſcammony, gum-gutta; and even fermented liquors, and generous wines, as thoſe of Spain, &c. by the employment of which we have not unfrequently read of *tæniæ* being expelled. But tartar-emetic, diſſolved in a ſufficient quantity of water, and given at intervals, appears to me to be beſt calculated for the removal of tæniæ ‡‡.

* Vol. v. art. 7. p. 103. † *Med. Journ.* of Venice, an. 1763, n. 22. ‡ *Ibid.* n. 8. an. 1764, p. 62. || Tode, *Coll. med. Haun.* vol. i. p. 21. § *Journ. de med.* an. 1768, T. xxviii. p. 44. ¶ *Med. eſſays and obſerv.* p. 186.

** Another remedy againſt the *tænia* has lately been publiſhed in France by order of the King, the author of which is Renaud, and which is ſaid to have been ſucceſsful even in caſes where that of the widow Nouffer had failed. It is as follows: "In the evening, let a clyſter of pure water, with one dram of ſoap, be adminiſtered. Next morning, when the patient is faſting, let a dram of the powder of fennel-root be given, mixed with a cup of water. This is to be continued for five days. After this, to the ſame powder there being added a quantity of the *mercurius ſublimatus dulcis*, jalap and rhubarb, with a ſufficient quantity of honey, let it be made into boluſes, to be taken by the mouth. Let the ordinary drink be a decoction of mulberry-root."

†† *Scelta d'opuſculi*, &c. *di Milano*, 1776, T. xiii. ‡‡ *Acad. prælect. de cogn. et cur. morb.* p. 652.

‡‡ A woman laboured under fever, dyſpnœa, proſtration of ſtrength, and a ſenſe of pricking pain in the right ſide. A vein was opened, and an emetic given. The menſes came on. On their ceaſing ſhe took an emetic. She had twenty-five ſtools. A mixture, conſiſting of laudanum and the *confectio hyacinthina*, brought off a tænia five feet long. *Act. Helvet.* tom. vi. p. 216. I myſelf have made a ſimilar obſervation in the caſe of a man.

Here alſo it is to be obſerved, that Raymund brought off a tænia by means of the caſtor-oil, and ſometimes by a large doſe of the oil of olives, or that of ſweet almonds, adding to them two drams of the bark of the pulveriſed root of the *morus fœmina*. See *Hiſt. de la Societ. roy. de med.* vol. 2. p. 226.

137. Aſcarides are deſtroyed by drinking certain mineral waters of a purgative quality; by Epſom ſalt, or the *ſal mirabile* Glauberi; by injections of the expreſſed oils, or of the decoction of tanſy, or of milk, ſugar, and honey; and they are cleared off by ſuppoſitories of aloes and honey. Lange, in the caſe of infants, employs citron-ſeeds. Twelve or fifteen of them are bruiſed

together, and boiled in four ounces of milk, and afterwards vigorouſly expreſſed. The remedy is continued for three or four days, until the worms are ejected along with the fæces *. But in the cure of all the ſpecies of worms, attention muſt be paid to the diet, which ought to be calculated to remove the cauſes by which the worms are cheriſhed.

* *Miſcel. verit.* faſcic. 1. p. 85.

CHAPTER XI.

CONCERNING TYMPANITES.

138. To the inteſtines in ſome meaſure belongs the diſeaſe named *tympanites*, or *tympanias*. In it the whole abdomen ſwells, and is diſtended in ſuch a manner, that when ſtruck with the hand it ſounds like a drum (tympanum). But this ſounding tenſion and ſwelling of the abdomen, in order to conſtitute real tympanites, ought to be uniform and of long continuance. For other ſhort-continued and tranſient inflations of the abdomen, or ſuch as quickly ariſe in acute diſeaſes, are now properly diſtinguiſhed by the name of *meteoriſmi* *. It is alſo named *hydrops ſiccus* and *flatulentus*.

* The author has diſcourſed at greater length concerning meteoriſmi of the belly, in Vol. III. p. 367. 368. and 369.; and the remarks there delivered may be properly called to mind here.

139. The moſt frequent cauſe of the complaint is, great diſtenſion of the ſtomach and inteſtines, or only of one or other cavity, from a collection of air. It is leſs frequently occaſioned by air extricated in the abdominal cavity, or burſting into it from the inteſtines, and diſtending the whole abdomen; and, laſtly, it is leaſt frequently of all cauſed by air collected within the coats of the inteſtines and other viſcera, that is, by an actual emphyſema of all of them. Hence, according to the parts filled and diſtended with air, different varieties of tympanites ariſe, ſuch as the *tympanites inteſtinalis* *, *abdominalis* †, and *emphyſematicus* ‡; or the ſpecies compoſed of theſe. In regard to its cauſe, it is alſo named ſometimes *ſpaſmodic*, at other times *aſcitic*, and ſo forth. In regard to its origin, it is at one time called *primary*, at another time *ſecondary*, &c.

* Smeti, Hildanus, and Saxonia, deſcribe the *tympanites inteſtinalis*, and ought therefore to be conſulted.

† There is a deſcription of the *tympanites abdominalis* in the works of Valles, of Ballonius, and of Combaluſier.

‡ Combaluſier and Duverney treat of the *emphyſematic tympanites* in the Peterſburgh Tranſactions.

140. We ſhall now proceed to the enumeration of the remaining cauſes, namely, the remote. Theſe are, atony of the fibres of the inteſtines and ſtomach; conſtriction * of ſome part of the inteſtines, whether from an organic injury, or

a ſwelling, or from ſpaſm; dyſpepſia; apepſia; too great a quantity of air filling the inteſtines; colic-pains, eſpecially ſpaſmodic and hyſterical pains, frequently recurring; debility of the whole body, and of the abdominal viſcera; intermitting fevers not properly reſolved, or improperly checked; crude, windy, fermenting food; drink of a ſimilar kind, or containing ſpirits, or that which is too cold; a collection of mucus and phlegm in the inteſtines; inſufficiency, or ſluggiſhneſs of the bile; cathartics, or other remedies which weaken the tone of the inteſtines; the abuſe of opium, oily things, and warm water; long-continued coſtiveneſs; or, on the other hand, exceſſive and obſtinate looſeneſs of the belly, or the ſudden ſuppreſſion of it; metaſtaſes; ſlight wounds, putrefaction, ulceration, and perforation of the viſcera; rupture or wounding of the gall-bladder, in conſequence of which an effuſion of bile takes place into the abdominal cavity; pus, water, and blood, collected in the ſame cavity; emphyſema; fluor albus; the diſcharge or retention of the lochia or catamenia; rickets; icterus; hypochondriaſis; and the like.

* Bagard (*Trait. prat. de l'hydrop. et de la jauniſſe*, par M. Marquet, P. iii. p. 160.) has ſhewn a particular inſtance of tympanites exiſting within the peritoneum, in conſequence of which death was occaſioned after twelve days. For, on the body being opened, air was diſcharged with a loud ſound, accompanied with a fetid ſmell. The inteſtines were three times larger than uſual, in conſequence of which they were perforated, inflamed, and gangrenous, eſpecially where they adhere to the meſen-

tery; the rectum, ſix or ſeven inches from its orifice, was exceedingly contracted, as if it had been tied with a ligature. All the fæces were contained in the colon. The cauſe was a peſſary adhering at the bottom of the vagina, compreſſing and ſtrangulating the inteſtine. A piece of long round wax introduced would probably have been the remedy. *Com. Lipſ.* vol. xvii. p. 691.

THE DIAGNOSIS.

141. It is diſcovered by applying the hand to the belly. The belly is hard and tenſe; there is no fluctuation, if the diſeaſe be ſimple, but it emits a kind of ſlight hollow ſound; there is a frequent deſire to belch; no impreſſion of the finger remains, unleſs it be conjoined with *anaſarca;* the patient is ſenſible of none, or only of a ſlight increaſe of weight; the reſt of the body is emaciated; the feet ſeldom ſwell, and never ſo much as in the other ſpecies of dropſy. The diſeaſe at firſt is generally borne lightly, as it is alleviated by the eructation and flatus diſcharged. But, as it advances, the flatus is no longer brought up; anxiety, dry cough, and difficult reſpiration come on; the pulſe becomes more violent and quick, and ſomewhat harder than natural; the belly becomes more and more bound; harder ſcybala are paſſed with the greateſt difficulty; the colour vaniſhes; œdematous ſwellings or anaſarca, ſometimes even aſcites, ſupervene, and then the patient dies in a miſerable manner. Hippocrates obſerves: "When patients labour under tormina, pains about the umbilicus, and a

pain of the loins, which is neither relieved by a purge, nor by other means, the complaint paſſes into a dry dropſy." Aph. xi. ſect. iv.

142. Sometimes, if any part of the inteſtinal canal be unuſually turgid, there alſo oblong or round tumours are evident to the touch, and ſometimes likewiſe to the ſight. From the ſeat of the ſwelling, ſometimes the ſtomach, ſometimes the colon, ſometimes other parts, are known to be affected. In the *emphyſematic ſpecies* the ſwelling is plainer and more uniform, and a fainter ſound is emitted. In the *tympanites abdominalis*, the abdomen, when touched, not only ſends out a ſound, but alſo, if it be ſtruck by applying both hands to the ſides, it exhibits a kind of undulation of the contained air. Which will appear ſtill more evident, if the complaint be preceded by cauſes which may introduce air into the abdominal cavity, or extricate it there, and if, at the ſame time, the actual fluctuation of a fluid betray itſelf.

THE PROGNOSIS.

143. At the beginning of tympanites there are ſome hopes; for it ſometimes terminates favourably, eſpecially if mere atony, or inſufficiency of bile, or exceſs of phlegm, occaſion the complaint. Even of ſuch patients, however, more are cut off than ſurvive. But when the complaint is advanced, ſcarcely any hope remains.

If it proceed from the leſion, rupture, or corruption of the ſtomach, inteſtines, or viſcera, or be conjoined with watery or purulent aſcites, or anaſarca, it in that caſe is incurable. For then no benefit is received from the eructation of flatus, or from the diarrhœa; which laſt, if it be ſudden and frequent, rather portends the patient's ſpeedy death. But, according to Vogel, the complaint is ſometimes reſolved by a hæmaturia*. Sometimes the ſwelling of the belly falls a little, and affords a deceitful hope; but it ſhortly after increaſes again. When a *vomiting of blood* ſupervenes, it is almoſt a certain ſign of approaching death, eſpecially if fainting be conjoined with it. Loſs of ſtrength, emaciation, fever, loſs of appetite, enteritis, ileus, iſchuria, increaſe of the colic pain, inflammation of the umbilicus or inteſtines, and ſphacelus of the legs, if they ſupervene, indicate certain death. Likewiſe, when the diſeaſe is occaſioned by rupture of the gall-bladder, and effuſion of bile, it proves fatal.

* *De cog. et cur. morb.* § 665.

THE CURE.

144. WHEN tympanites ariſes from morbid conditions of the *primæ viæ*; from *atony* and *debility*; from *defect* or *ſluggiſhneſs* of the bile; or from bound belly; it ought to be cured by means of cathartics, bitters, ſaponaceous things, and aperients; as the *pills of Becher*, the *pilulæ tarta-*

reæ of Bontius, the *pilulæ de gummi ammoniaco* of Quercetanus; rhubarb; venice-ſoap; the *elixir proprietatis* of Paracelſus; the ferulaceous gums; the extract and decoction of wormwood, chamomile, ſouthernwood, and juniper-berries; caſcarilla, orange and peruvian bark; aniſeed, thoſe of the daucus Creticus, fennel and corianders; and, laſtly, ſteel. Likewiſe acrid injections of a decoction of tobacco, rue, chamomile-flowers, melilot and elder-tree; and the urine of children or calves, ſometimes cold, are recommended. Some in particular adviſe ſucking out the air from the inteſtines by introducing a ſyringe into the anus. The abdomen externally ought to be rubbed with balſams, oils, and penetrating ſpirits; it ought to be fomented by means of bags of flour, common ſalt, and carminatives applied warm; or by means of plaſters of galbanum, melilot and laurel-berries; by the ointment of the arthanita major; or cold water, which may likewiſe be given by way of drink; or it ought to be ſurrounded with a belt, and gently compreſſed. Similar remedies are calculated for the *emphyſematic* ſpecies of the diſeaſe.

145. If it ariſe from ſuppreſſion of the *lochia* or *catamenia*, bleeding, the application of leeches, and gentle emmenagogues are to be employed. Antiſpaſmodics, alſo, when *ſpaſms* and *convulſions* occaſion the complaint, are very proper; among which oil and laudanum, cold water, or that which is ice-cold, both internally and externally

employed, and caſtor, are the chief. When *putrefaction*, or an *effuſion of pus*, have given riſe to the diſeaſe, acids, reſinous things, and antiſeptics ought to be adminiſtered. Laſtly, if air be contained in the abdominal cavity, it may be drawn off by the operation of paracenteſis; although frequently, while the cauſe remains, the diſeaſe is not removed, or often becomes worſe. When it is occaſioned by exceſſive *evacuations*, ſtrengthening remedies, bitters, and aſtringents, are the remedies to be employed *.

* An *anomalous tympanites*, which was cured by ſaponaceous, antihyſterical, antiſcorbutic, and chalybeate remedies, may be ſeen in the firſt volume of the Edinburgh Tranſactions, communicated by Dr Alexander Monro.

CHAPTER XII.

CONCERNING OBSTRUCTIONS AND SWELLINGS OF THE ABDOMINAL VISCERA.

146. WHENEVER any viſcus becomes preternaturally indurated or enlarged, and tenſe, it is commonly ſaid by medical men to be *obſtructed*. Thus *glands* are ſaid to be *obſtructed*, when their ſize is increaſed, or when, from being ſoft they become hard, and afford reſiſtance to the touch. Obſtruction is alleged to take place, when the *extreme arteries*, which they conſider as being *conical*, being rendered narrower, whether owing to a morbid ſtate in themſelves, or from another cauſe, are incapable of tranſmitting their fluids;

or when the fluids themſelves have acquired ſuch denſity, thickneſs, and viſcidity, that they cannot enter into the extremities of the capillary veſſels; or, laſtly, when the contractility of the veſſels becomes ſo languid, that it can no longer propel the fluids. From all of theſe cauſes they affirm, that the fluids ſtick and are collected in the extreme veſſels, that the parts are dilated, filled, indurated, and increaſed, and *obſtructions* occaſioned.

147. But many objections ſeem to prevent our acquieſcing in this explanation. And, in the firſt place, the lateſt anatomical obſervations demonſtrate that the extreme arteries are not *conical*, but *cylindrical*. When a fluid, therefore, has once entered them, it cannot be prevented by the decreaſing diameter of the veſſels from proceeding farther. But let us grant that the fluid, either from a morbid ſtate of the veſſels, or from a morbid ſtate peculiar to itſelf, ſticks in them. In that caſe the veſſels filled by it are conſidered by thoſe who are ſkilled in hydraulics as being ſhut up and ſolid. Nothing more can flow into them, or be received by them. Hence they can neither be diſtended nor dilated to a greater bulk, for the propelled fluid immediately betakes itſelf to where it meets with leaſt reſiſtance: it, therefore, either flows into the free and patulous veſſels, or it returns by a retrograde courſe. If the firſt happen, the capacity of the veſſels may be gradually increaſed, to be ſure, by the influx of the fluid, but

the part will not become indurated and tumefied. If the ſecond happen, the veſſels will neither be dilated, nor will the part exceed its natural dimenſions. Some change, therefore, muſt neceſſarily happen in the obſtructed part, on account of which it both daily increaſes in ſize, and becomes more tenſe from the hardneſs it acquires. But what can this change be but the *dilatation*, *extenſion*, and *repletion* of the cellular membrane, of which the viſcera and glands are almoſt intirely compoſed? For if the cellular membrane be relaxed; if its empty ſpaces yield too much to the influx of the fluid; if they admit it too abundantly or too thick, and do not propel it with ſufficient force; and if that happen ſlowly and ſucceſſively, according as the cellular membrane is more and more weakened, or ſtretched by the fluid ruſhing into it: it is eaſy to underſtand how the cells, being gradually dilated and diſtended with accumulated fluid, not only ſhew increaſed bulk of the parts, but alſo hardneſs and reſiſtance; and how at the ſame time ſome circulation of the fluids is kept up through the remaining veſſels, preſerving the nouriſhment and life of the obſtructed part. The ſame thing muſt likewiſe happen, if the ſmall holes in the coats of the veſſels, named *inorganic pores*, or the lateral veſſels, which open into the cells, in conſequence of the fluid being prevented from proceeding through its proper veſſels, and forced to ſeek a paſſage elſewhere, are preſſed upon, dilated, and

filled: for in that caſe too great a quantity of fluid will be forced into the cellular ſpaces lying among the veſſels, which, if it be moreover ſluggiſh and viſcid, will be the more capable of explaining all the phenomena of obſtructions.

148. All parts of our body are liable to *obſtructions*; but particularly the *liver*, *ſpleen*, *meſentery*, *omentum*, *pancreas*, *kidneys*, *ovaria*, *uterus*, and glandular bodies *. If any gland, or a particular part of the cellular membrane any where, only ſwell and become hard, or any lymphatic veſſel become enlarged (the poſſibility of which, however, ſome of the moderns, and among them Portal, deny), various kinds of tumours ariſe, namely, *ſolitary*, *circumſcribed*, *growing to membranes*, frequently *adhering to the ſurface of the viſcera*, *ſtrumous*, *encyſted*, *folliculated*, *formed like hydatids*, and ſo forth. Likewiſe, according to the diverſity of the nature of the obſtructing fluid, and the different degrees of obſtruction, or the form of the tumour, and ſymptoms attending it, the ſwelling is named *ſteatoma*, *ſarcoma*, *ſchirrhus*, *cancer*, *&c.*

* A hard indolent tumour in the epigaſtrium has been deſcribed by the author, in *Obſerv.* xxii. of the work, entitled, *Obſervationum medicarum, quæ anatomiæ ſuperſtructæ ſunt*, &c. collected and publiſhed an. 1764, by Benvenutus. [*Germ. Editor.*]

149. The remote cauſes are, a languid and weak habit of body; atony of the fibres; viſcid and thick fluids; acid, ſour, glutinous, fatty, aſtringent, and coagulating articles, either taken as medicine or food; imperfect digeſtion; vitiated

chylification; long continued, or improperly ſuppreſſed fevers; exceſſive evacuations; moiſt air; the drinking of unwholeſome water; the abuſe of wine, or ſpirituous liquors; an indolent life; anxiety of mind; grief; hypochondriaſis and hyſteria; ſpaſms; and every other thing which either weakens the tone of the parts, or deranges the proper *craſis* of the blood, or retards its motion.

THE DIAGNOSIS.

150. The account of the preceding circumſtances diſcovers the cauſes from which the *obſtruction* generally proceeds, and prepares the way to the *diagnoſis*. But the ſymptoms preſent are, tenſion, weight, a fixed and dull pain, and ſwelling in ſome part of the belly. Sometimes there is preſent difficulty of reſpiration, and a deep, dry cough, which proceeds either from the diaphragm being forced up, or from the conſent of the nerves. It is to be obſerved, however, that, when the obſtruction is inconſiderable and recent, it is not eaſily perceived, and that only ſome injury appears in the action of the part affected. But, whenever any injury occurs in the functions of the viſcera of the lower part of the belly, we are at once entitled to aſcribe it to obſtructions, becauſe frequently ſuch complaints ariſe from debility, or a morbid ſtate of the ſtomach, or from depravation of the gaſtric and other fluids of the ſtomach, or from ſpaſms. Like-

wiſe there is a total abſence of pain, if the obſtruction, in conſequence of its long continuance, has acquired a *ſchirrous* nature; or, on the other hand, an acute and pungent one is excited, together with a ſenſe of burning, when it paſſes into *cancer*, or *abſceſs*. Theſe are long protracted, and gradually increaſe. Laſtly, a bad habit of body, cachexy, emaciation, and atrophia; ſlow fevers; œdematous ſwellings; thick, lateritious urine; aſcites; anaſarca; and various other ſpecies of dropſy, ſupervene.

151. If the liver be obſtructed, according as the right or left lobe is affected, a ſwelling and reſiſtance are felt in the right hypochondre, or in the epigaſtrium, unleſs it be deeper ſeated under the falſe ribs; the patient lies more eaſily upon the right ſide; and ſymptoms of *icterus* appear, eſpecially if the concave part of the liver be affected. But if the *ſpleen* be ſwelled, it is manifeſt to the touch in the left hypochondre; ſometimes it falls forwards or downwards; the patient reſts more conveniently upon the left ſide; and when he changes this poſture, and turns to the right ſide, he perceives on the oppoſite ſide a ſenſe of weight and pulling. If the *pancreas* be affected, a ſwelling, pain, and ſenſe of weight acroſs the bottom of the ſtomach, are felt. Again, if the *meſentery*, *omentum*, *kidneys*, *ovaria*, or *uterus* be obſtructed, ſymptoms of obſtruction are manifeſted in the middle of the abdomen, or about the

ilia, or in the hypogaſtrium; and injuries of the functions of theſe parts are preſent. Swellings of the omentum are of various kinds, according as they are occaſioned by a watery fluid, or by a gelatinous or oily one, or one of another nature, or by a collection of air. The hydatids, which are found in the *omentum*, according to Portal, are formed, not of the blood-veſſels, or lymphatics, but of the *cellular membrane* *. For by blowing in air he changed the parietes of theſe tumours into cellular membrane, and ſometimes diſcovered fat between their laminæ. Theſe tumours can be felt in the region of the omentum. They are frequently ſo moveable, that, on the patient's poſture being ſhifted, they paſs from one ſide to another. If they abound with fatty and thick matter, and, in the progreſs of the diſeaſe, increaſe in bulk and weight, they occaſion troubleſome pulling and tenſion of the viſcera to which they adhere, eſpecially the ſtomach; in conſequence of which frequently the moſt troubleſome vomiting is excited †. The tumours growing to the meſentery are deeper ſeated, leſs moveable, and ſituate more in the centre of the abdomen. The omentum, according to Portal, is likewiſe ſometimes affected with *emphyſema*, in conſequence of air being evolved between its laminæ: which likewiſe happens without putrefaction to hypochondriacal and hyſterical people. The tumour occaſioned in this

way is moveable, it is perceptible to the touch, and elaſtic, and is cured by riding and the employment of the bath. Schirrous tumours, as I have already obſerved, betray themſelves by their hardneſs and the abſence of pain. Women, who have frequently borne children, are moſt liable to them †. It may be remarked, however, that all the ſymptoms are frequently fallacious, on account of the ſituation of the viſcera being frequently changed, or on account of complications of the inteſtines, and tumours growing to them, as I have elſewhere repeatedly noticed.

* *Hiſt. de l'acad. roy. de l'an.* 1770 & 1771, p. 541.

† *Comment. de reb. in ſcient. et med. geſt. Lipſ.* vol. xxi. p. 408.

‡ In pregnancy frequently the omentum is compreſſed by the uterus, and rolled back upon itſelf, ſo as to be ſometimes inflamed, and indurated, and to occaſion tumours of various forms, hard and oblong, ſituate ſometimes obliquely, ſometimes tranſverſely. Such tumours are found, after parturition, in the abdomen of women, and are carried about even for many years without great inconvenience. Ruyſch in the body of a woman obſerved the omentum *two inches thick*, *three broad*, and upwards of a *ſpan long*, and of an *adipoſe-fleſhy*, or *ſcirrhous* diſpoſition.

THE PROGNOSIS.

152. THE prognoſis may be readily formed from the obſervations already delivered. Generally *obſtruction*, when it is recent, and ſupervenes in young people, is reſolved; but, when it is of long ſtanding, and when it occurs in advanced life, it is almoſt incurable. The flow of the piles; intermitting fever; ſometimes vomit-

ing of blood; and a diarrhœa coming on, not unfrequently afford relief. Sometimes, likewiſe, an epiſtaxis has cured a ſwelling of the ſpleen, as Menghini of Bologna has obſerved.

THE CURE.

153. FOR removing obſtructions of all kinds, the indications are, to attenuate the thick fluids; to rouſe into motion ſuch as are ſtagnant; to dilute ſuch as are acrid; to render fluid thoſe which are coagulated; to open the paſſages; to allay and remove ſpaſms; to reſtore tone to the fibres; and, laſtly, to remove the prediſpoſing cauſes. With which view, the bowels ought firſt to be relaxed, *per epicraſin*, as it is called; and this muſt be occaſionally repeated at proper intervals, while the other aperient and deobſtruent remedies are employed. Rhubarb, cryſtals of tartar, ſoluble tartar, manna, aloes, the *pilulæ tartareæ* of Bontius, the *pilulæ de ammoniaco* of Quercetanus, and the *pilulæ de tribus* with rhubarb, are preferred to others. Likewiſe clyſters frequently thrown in, both with the view of relaxing the bowels, and, by means of the abſorbents, of pouring fluid immediately into the viſcera, are greatly commended by many. Nor is it improper to let blood, at leaſt by means of leeches, if plethora, pregnancy, or ſuppreſſion of

the menſtrual, or hemorrhoidal diſcharge, have given riſe to the complaint.

154. Among the vegetables poſſeſſing an aperient property, five roots, namely, thoſe of *parſley*, *aſparagus*, *fennel*, *petroſelinum*, and *ruſcus*, claim the firſt place. In warm and dry temperaments, the root of graſs, ſuccory, ſouthernwood, ſtrawberries, ſorrel, agrimony, fumitory, and beccabunga, are to be preferred. In lax and cold conſtitutions, the root of madder, fern, and turmeric; wormwood; ſouthernwood; horehound; horſe-radiſh; and orange-peel, ſeem to be preferable. The decoctions and juices expreſſed from theſe in the ſpring, or in a concrete form in the winter, are to be employed; to which may be added the whey of cow's or goat's milk. On the ſame account the beſt remedies are ſaponaceous and inciſive things, as gum-ammoniac, ſagapenum, and opponax; venice ſoap; the *terra foliata tartari*; the *liquor terræ foliatæ*; the lixivial ſalts; the neutral ſalts; vitriolated tartar; the ſal polychreſt; the *arcanum duplicatum*; ſal ammoniac, and its flowers; tincture of antimony; kermes mineral *; and calomel. Huxham affirms, that he has a thouſand times experienced the efficacy of the terra foliata in removing obſtructions; or he even propoſes ſubſtituting in place of it, as being ſtill more efficacious, the volatile ſalt of hartſhorn ſaturated with the acetous acid †. Boerhaave, in very cold conſtitutions, recommends ſoap made of the pureſt alkali and di-

ſtilled oil, namely, the ſoap of Van Helmont ‡. Harvey propoſes a ſpoonful of the tincture of the ſalt of tartar, morning and evening ‖. It acts as a deobſtruent, and excites a flow of urine. This tincture conſiſts of two ounces of calcined ſalt of tartar in ſpirits of wine, not rectified, but of the beſt kind, digeſted in a ſand-bath until the colour becomes yellow. Let it then be decanted for uſe. The juice of grapes newly expreſſed attenuates all the fluids, and opens obſtructions, as Van Swieten affirms §. Farr, by means of the internal and external employment of cicuta, diſcuſſed obſtructions of the liver and ſpleen, from which both cough and aſcites, and anaſarca conjoined with tertian intermittent, had ariſen ¶. Lange mentions that the extract of wormwood with venice ſoap, to the extent of half a dram daily, within three weeks produced remarkable benefit in the cure of obſtructions of the *liver* and *ſpleen* **. And he affirms that, in the treatment of the atrophia of infants and children, proceeding from obſtruction of the lower belly and meſentery, Glauber's ſalts, taken in whey, and continued for a length of time, proves extremely efficacious ††. Ledeleury recommends the decoction of fig-wort, venice ſoap, and ipecacuanha in ſmall doſes; and, towards the end of the diſeaſe, he employs linſeed-oil with good effect ‡‡.

* Geoffroy *Mat. Med.* T. i. p. 126. † *Obſerv. de aere et morb. epidem.* T. i. p. 144. ‡ *Chem.* T. i. p. 395.

‖ *De art. curand. morb. expectat.* p. 25. § § 605. n. viii.
¶ *Med. obſervat. and inquiries*, T. iv. ** *Miſcel. verit.* faſc. i. p. 55. †† *Ibid.* p. 79. ‡‡ *Comment. Lipſ. de reb. in ſcient. nat. et med. geſt.* vol. viii. P. iii. p. 423. 424.

155. After the timely and long continued employment of theſe remedies, we muſt next have recourſe to ſtrengthening remedies, as millefolium, peruvian bark, iron, and preparations of it. Moreover, fomentations, frictions, anointing the patient with the oil of capers, that of chamomile, and wormwood; ointments and plaſters, as thoſe of arthanita, of hemlock, of frogs with mercury, the *ſaponatum* of Barbetta (adding occaſionally gum-ammoniac, gum-galbanum, and gum-elemi), ought not to be neglected externally. In the ſummer-time the proper remedies are, the acidulous mineral waters, or the cathartic bitter ones, or chalybeate ſprings, and the bath. But nothing is more efficacious than an embrocation, firſt of milk, or an emollient decoction, or next, of a mineral or chalybeate water. This remedy is employed ſo that the fluid may fall by drops from a height upon the part affected. In the employment of it, however, we muſt guard againſt its falling with too much force, which, either by creating pain, or increaſing it if already preſent, might prove detrimental to the patient. When the ſwellings are ſoft and troubleſome from their weight, the uneaſineſs is alleviated by means of bandages brought round the abdomen *. Gorter recommends living animals, or their warm viſcera, to be conſtantly applied to the obſtructed parts, as being

well calculated, by the natural heat they afford, to reſolve the fluids rendered concrete by cold, or any other ſimilar cauſe †.

* Portal. l. c. † *De ſecret. humor.* § 33.

156. In the regimen, crude, farinaceous, fatty, flatulent articles of diet, and ſuch as readily become putrid, as well as acid and ſour things, ought to be avoided. The drink ought to be the pureſt water, or that in which vegetables have been boiled, or which has been prepared with ſteel, or weak white wine taken moderately. Breathing pure air, riding on horſeback, or in a carriage, and travelling, are ſo neceſſary, that the cure cannot be completed without them. What ought to be done in the cure of ſcirrhus *, cancer, abſceſs †, atrophia ‡, and dropſy ‖, I have elſewhere more than once pointed out.

* Albertini, merely by the employment of the ground pine, without uſing any other external remedy, or any excretion following, ſucceeded in removing a tumour, which, to the touch, appeared to be ſcirrhous. Morgagni, *Epiſt. anat. med.* xxxix. 35. But this remedy muſt be avoided when a diſcharge of blood from the uterus takes place. *Id. ibid.* Valſalva checked ſcirrhous tumours of the uterus and mammæ, by employing bleeding twice in the ſpring-time, and twice in the autumn. *Id. ib.* Lange is very ſucceſsful in the removal of tumours of the glands, and recent ſcirrhous tumours of the mammæ, which neither mercury nor hemlock had reduced, by means of petroſelinum bruiſed down and mixed with the patient's urine, and afterwards applied to the indurated part. *Miſcel. verit.* faſc. i. p. 26.

† Concerning ſcirrhus, cancers, and abſceſſes, ſee the ſhort *Commentary on Inflammation*, Vol. I. par. 78.; as alſo concerning *Fevers*, par. 306. to 309. and par. 333. Vol. III. par. 387. and 389. 397. Vol. IV. Part II. par. 16. &c.

‡ Concerning atrophia, ſee Vol. IV. part I. chap. iii. and elſewhere.

‖ Concerning dropſy, ſee Vol. III. chap. ii.; and of this Vol. part I. chap. v. part II. chap. xi.

Although the proper place for diſcuſſing the operation of paracenteſis in dropſy of the abdomen might appear to be the fifth chapter, where the author, treating particularly of dropſy of the cheſt, treats in a general way of every ſpecies of dropſy of the human body; on account of other occupations with which I was then engaged, I had not time left for conſulting his notes upon the ſubject. Afterwards, however, I happened, when turning over ſome papers of his concerning this operation, to hit upon the following obſervations, which I have thought fit to add here, although it perhaps may not appear to be altogether the proper place, and although they may not ſeem to be either new, or abſolutely neceſſary, rather than to omit them altogether. [*Germ. Ed.*]. His own words are: "The paracenteſis ought to be performed between the umbilicus and the anterior ſpine of the ileum. In this part there are neither nerves nor blood-veſſels of any conſequence, nor does the *muſculus rectus* lie in the way. This place, therefore, is more ſecure for performing the operation. The water ought to be intirely drawn off at once, that the admiſſion of the air may not induce putrefaction, or other bad ſymptoms, in conſequence of its being drawn off at different times. But, that the intire extraction of the water may not be followed by fainting, and other bad conſequences, a belt is propoſed, the deſcription and uſe of which are given by Dr Alexander Monro, in vol. I. of the *Edinburgh Phyſical Eſſays*. For, by means of this bandage, all the abdominal viſcera are compreſſed juſt as when the water was preſent. Hence it happens, that fainting does not ſucceed the operation, as would otherwiſe take place in conſequence of too great a relaxation of the viſcera, and their being too inſtantaneouſly freed from their accuſtomed weight. Garengeot (vol. i. obſerv. p. 298.), before performing the operation, recommends to the patient uſing exerciſe, with the view that the thicker parts of the watery fluid contained in the cavity may be properly mixed, and thus more eaſily diſcharged. But if, after the operation, it be a doubtful matter whether or not ſuch thick particles be retained, he propoſes the injecting of barley-water in order to waſh them out."

CHAPTER XIII.

CONCERNING JAUNDICE AND BILIARY CALCULI.

157. THE ſhining white and red colour of the whole ſkin may be changed in various ways; for it either becomes preternaturally yellow, or green, or black, or pale, or tinged with various hues. This diſeaſe is named by the Greeks *icterus* *, and by us *morbus regius* †, ſometimes *morbus arquatus* ‡, ſometimes *aurigo*, ſometimes *bilis ſuffuſio*. *Icterus* ariſes from diſeaſes of the liver, and from the checked or diminiſhed excretion of bile; although, for the moſt part, it does not always proceed from this cauſe alone. Frequently, in *icteric bodies*, no morbid condition of the liver, no taint of the *ductus biliferi*, and no *biliary calculi* are obſervable. For the vitiated mixture of the blood or ſerum, or morbid condition of the lymph, independent of any vitiation of the liver, or bile, not unfrequently—as appears from the moſt accurate obſervations—occaſions an unnatural colour in the whole ſkin, ſaliva, and other fluids, ſimilar to that occaſioned by the bile flowing back into the blood, and being diffuſed over the whole ſyſtem. The former is more properly named *icterus*, and the latter leſs properly ‖. The colour of the blood, therefore, or of its ſerum or lymph, deviating remarkably from its natural

condition, may be conſidered as being the proximate cauſe of this diſeaſe.

* The *Ictidos viverra* is a ſpecies of wild-weaſel, the eyes of which are of a golden colour. The *icteros*, a bird of the ſame colour, on ſeeing which, as Pliny mentions, the *icteric patient* uſed to be cured, but the bird itſelf died.

† It was named *regius*, becauſe, according to Pliny, thoſe who frequent the courts of kings are moſt frequently affected with this complaint.

‡ *Arquatus*, on account of its reſembling the colour of the rain-bow.

|| Wedel, Paracelſus, Lange, Strauſs, Bonet, *Theſ. med.* vol. ii. p. 855.

158. To the remote cauſes belong, abundance of bile, or too great thinneſs of it, in conſequence of which it cannot be intirely excreted, but ſome part flows back into the blood *; or an alkaline acrimony of it, on account of which the bile-ducts are irritated and contracted; or ſome impediment in the branches of the hepatic duct, or in its trunk, or in the ductus choledochus, preventing the free paſſage of the ſecreted bile into the duodenum. This is occaſioned, either by ſmall clots of viſcid bile, or by biliary calculi formed in the liver or gall-bladder, by which the paſſages of the *ductus biliferi* are obſtructed; or by viſcid mucus collected in the duodenum; or by the meconium in children, by which the orifice of the ductus choledochus is ſhut up; or by lumbrici of the inteſtines entering into the enlarged choledochus †; or, laſtly, by the diminiſhed capacity of all theſe ducts. This laſt, again, is diminiſhed, either by the ſponta-

neous and gradual contraction of the ducts, or by rigidity or ſpaſm of them; or by external compreſſion, in conſequence of the congeſtion and ſwelling of neighbouring parts. Under this head come, inflammation, eſpecially of the under part of the liver; obſtruction; ſcirrhus; tubercles of various kinds; hypochondriacal and hyſterical ſpaſms ‡; acute or intermitting fever; acrid and draſtic poiſons, as Hoffman and others notice; colic pains; diſtention or inflation of the inteſtines, eſpecially of the *duodenum* and *colon*; increaſed bulk and ſcirrhoſity of the pancreas; indolence; long-continued ſlothfulneſs, or frequent ſtooping, to which certain employments, and the purſuit of literature, are liable; emotions of mind, as rage; ſudden terror; grief; hard, thick, viſcid food; the abuſe of ardent ſpirits; pregnancy; a blow upon the right hypochondre; retention of the meconium; the ſudden cooling of the body in ſwimming; cachexy; ſwellings and obſtructions of the ſpleen; the bite of the viper, or that of other poiſonous animals ‖.

* The bile being agitated and attenuated by fever is reabſorbed into the blood, and tinges the urine and eyes nearly with the colour of jaundice; as Van Swieten remarks, § 587. Marckard, in a work publiſhed at Leipſic, an. 1778. entitled, *Mediciniſche Verſuche*, was of opinion that icterus does not ariſe from the regurgitation of the bile of the liver, unleſs that of the gall-bladder alſo flows in. But his opinion is refuted by Tode, in the review of that work. See the arguments in De Haen, vol. i. *Prælect. in inſtit. pathol.* p. 119. in additament.

† G. I. Beuth has ſhewn, that not unfrequently worms paſs from the duodenum into the gall-bladder, and, by continuing there,

occaſion icterus. He himſelf obſerved a very thick and large lumbricus ſhut up in the gall-bladder. See the *Comment. med. Lipſ.* vol. xviii. p. 713. Lieutaud alſo diſcovered a lumbricus altogether obſtructing the ductus choledochus. *Hiſt. anat. med.* vol. i. p. 211. Ludwig alſo affirms, that he, in like manner, obſerved three of the lumbrici teretes in the ſame gall-bladder.

‡ Coe and Haberden deny that icterus ariſes from ſpaſms: but ſuch ſpaſms are demonſtrated by inſtances of icterus being ſuddenly occaſioned by paſſions of the mind; according to the obſervations of Tode, Cullen, Monro, and Drummond.

‖ Galen (*De l. effect.* I. & V. c. 8.) obſerved a greeniſh colour all over the body take place from the bite of a viper in one of the Emperor's ſlaves. It appears alſo, that ſometimes the body becomes yellow from the bite of various kinds of ſerpents. Lanzoni obſerved an icterus occaſioned by the bite of a cat, which laſted forty days, *Ephem.* N. C. &c.

159. Icterus is divided into *primary* and *ſecondary*; into *legitimate* and *illegitimate*; into *critical* and *ſymptomatic*; into *yellow* and *black*; into *periodical* and *not periodical*; into *ſhort* and *tranſient*; and into *continued* and *obſtinate*. The *periodical*, or rather the *recurrent*, ſpecies is generally ſuppoſed to be occaſioned by biliary calculi. Theſe are frequently found, eſpecially in the gall-bladder; and they are ſmall ſtones of various ſize, figure, colour, and compoſition. They are found very minute, granulous, ſmall, larger, or of very great ſize; angular, rough, cubical, ſquare, quadrangular, with many angles, conical, ſpherical, oval, cylindrical; ſometimes ſeparate, ſometimes collected into ſmall maſſes; yellow, of a brown or ſaffron colour, pale, whitiſh, aſh-coloured, of a whitiſh-brown, of a golden yel-

low, blackiſh, or intirely black, bluiſh, red, and ſilver-coloured; golden, greeniſh, variegated, pellucid like cryſtal, or reſembling a ſpecies of chryſolith; or like gum-arabic; compoſed of various layers, or lamellæ, or radiated ſtriæ; in number ſometimes two hundred, three hundred, ſeven hundred, a thouſand, and, if Faſch is to be credited, two thouſand, and three thouſand ſix hundred and forty-ſix; ſometimes fewer in number, of the ſize of an olive, hazel-nut, common nut, or pigeon's egg; ſometimes ſingle, and filling the whole gall-bladder; hard, ſoft, and friable; generally floating in water; blazing on applying fire, as the yellow ones; or decrepitating, as moſt of the black or calcareous ones; or melting, and ſo forth *.

* See Morgagni, *Epiſt. anat. med.* xxxvii. Sabatier, *Tentam. med. de variis calculor. biliar. ſpecieb. &c.* and Boucher, *Obſervations ſur les pierres biliaires, &c.* A caſe of icterus proceeding from biliary calculi may be found in the 2d volume of the *Edinburgh Phyſical Eſſays*.

THE DIAGNOSIS.

160. ICTERUS is recogniſed chiefly by the various colour of the ſkin, eyes, and urine. In the *yellow* or *bilious* icterus, the ſkin becomes yellow, eſpecially about the temples, ears, and cheſt. The white of the eye appears dark coloured and ſuffuſed with bile. The urine is turbid, ſaffron-coloured, and tinges a rag dipt into it with the ſame colour, which other urine does not

do; nay, not unfrequently the diſeaſe itſelf is preceded by deep-red urine before any yellowneſs appearing elſewhere. The *ſputum*, ſaliva, and ſweat, as Borelli has noticed *, ſometimes become yellow; a bitter taſte is felt in the mouth, and there is generally preſent troubleſome thirſt. Nor are there wanting inſtances of perſons to whom all objects appear tinged with a yellow colour, which is to be derived from the eye, cornea, and aqueous humour being completely infected †. For ſuch is the diffuſion of bile over the whole body, that the veſſels, muſcles, viſcera, bones ‡, and fat, are found of a yellow colour ‖. To theſe ſymptoms are added, heavineſs of the body; a pain ſometimes about the ſtomach; loſs of appetite; nauſea; ſometimes vomiting, and agrypnia; itching all over the body, or in particular parts of it; generally coſtiveneſs, and the voiding of aſh-coloured or whitiſh fæces, which happens chiefly when the whole bile is forced to flow back into the blood. For, if the paſſage of the ductus choledochus be not intirely obſtructed, or if the cauſe of the icterus be in the cyſtic duct, in that caſe the fæces may be tinged §. Sometimes at the beginning of the complaint fever ſucceeds to the icterus, and ſeems to be excited by the ſudden paſſing of the bile into the blood, but ſuch a fever is frequently of ſhort continuance, quickly diſappearing. Sometimes it only ſupervenes upon an icterus of long ſtanding, and proves tedious. Sometimes it precedes the icterus,

as in acute diſeaſes; at times it is accompanied by it at every acceſſion, as frequently happens in tertian intermittents. But when the diſeaſe is protracted long, the whole body either becomes of a paliſh green ¶, or in courſe of time the yellowneſs increaſes daily; it induces a black colour, and then the urine itſelf is tinged with a brown or black hue. Sometimes, however, ſuch a black colour does not proceed from the duration of the yellow and bilious icterus, or from its greater intenſity, but from ſwelling of the ſpleen, and black bile infecting the whole blood, and changing the natural colour of the body; which is eaſily aſcertained by applying the hand, and by other ſymptoms of the atrabiliary complaint.

* *Centur.* i. obſ. 68.

† Not only Varro, Lucretius, Sextus Empiricus, Caſſius, Galen, but likewiſe Mercurialis, Hoffman, Sydenham, Boerhaave, Van Swieten, and latterly Durazzini, have illuſtrated the fact by their obſervations.

‡ Van Swieten, § 950. has obſerved the bones, and even the cartilages, tinged with a yellow colour. Likewiſe Beuth. l. c. and Stoll, *Rat. med.* Par. iii. ſect. v. obſ. 7.

‖ See the *Ephemeris*, Dec. 1. an. iv. obſ. 194. Morgagni, *Epiſt. anat. med.* xxxvii. and Storck, *Anat. med.* i. p. 150.

§ De Haen, *Rat. med.* P. iv. chap. iii. p. 120. He however obſerves (vol. i. *Prælect. tract. de ictero*), that ſometimes the fæces are white, without icterus being preſent. But I am of opinion, that the ſecretion of bile does not then go on. Some obſervations of Stoll, however (p. 355.), ſhew that the ducts carrying the bile to the inteſtines have frequently been found open in icteric patients, but the diſeaſe was for the moſt part conjoined with great inflammation of the lungs and pleura. Was the icterus, then, occaſioned by ſpaſm, or by ulcerating bile?

¶ In the *Ephem. N. C.* obſ. 41. p. 61. we read, that Lanzoni ſaw an icteric patient of forty years of age, whoſe face was all over green to the throat; while the right ſide of the body was black and the left yellow, ſo that three diſtinct colours were obſerved. It is ſurpriſing that the parts which before were green gradually became yellow, and that thoſe which were black, next becoming yellow, again gradually become black, until after the twentieth day the ſkin was covered all over with a yellow colour. In the ſame work, cent. iii. obſerv. 64. p. 145. Behrens relates the hiſtory of an icterus attacking half the body, in a man of ſeventy years of age, who, in conſequence of a fit of anger, was attacked with apoplexy, and afterwards with an hemiplegia of the right ſide, which ſide was at the ſame time affected with icterus, ſo exactly dividing the body, that the right ſide of the noſe was marked with the icteric colour, while the left was not at all. See Ettmuller, *Collect. oper. practi.* vol. ii. p. 844. Likewiſe Dupui, in his Inaugural Diſſertation *De homine dextro et ſiniſtro*, has a ſimilar obſervation, which, however, he does not think is to be found in any other author. But, independent of thoſe already quoted, the ſame obſervation was made by Valſalva; and Morgagni, in his 37th epiſtle, already repeatedly quoted, explains the phenomenon.

161. We learn that the complaint ariſes from a vitiated mixture of the blood, and from morbid ſtates of the ſerum and lymph, if there be no ſenſe of pain or uneaſineſs at the region of the liver; if a bad habit of body have preceded; if the urine do not ſhew the icteric ſymptom; if the fæces be not white, and come eaſily off; if a viper, or other poiſonous animal, have bit the patient, or if poiſon have been ſwallowed.

162. Nor, as is generally, though improperly ſuppoſed, muſt we conclude, that an obſtinate icterus, and which is apt to return, always ariſes from calculi in the gall-bladder (159.). For it has very frequently happened, that calculi have

been found in the gall-bladder, without being preceded by any ſymptoms of icterus. The ſame thing is teſtified by Lœlius a Fonte, Pechlin, Ettmuller, Valliſner, Haller, and many others mentioned by Morgagni *, who likewiſe had an opportunity of ſeeing eighteen perſons, beſides four others deſcribed by Valſalva, who had had ſtones in the gall-bladder, notwithſtanding which none of them had been affected with jaundice. Moreover, the ſame learned author has ſhewn, that, in theſe perſons, who, from having calculi in the gall-bladder, were liable to jaundice, beſides theſe calculi, likewiſe other morbid conditions of the liver were found. By attending to which circumſtances, and to thoſe afterwards to be noticed, it will appear evident that theſe calculi afford no certain pathognomonic ſymptoms, whatever others contend, and that their preſence can only be conjectured. For the heavineſs, pain ſtretching to the enſiform cartilage, the obſtinate and periodical icterus, and other ſimilar ſymptoms, are in common to other affections, and the effects of other cauſes. The evacuation of the calculi, by the inteſtines or mouth, therefore, is the only unequivocal ſymptom of their preſence. Hence Morgagni propoſes diſſolving the fæces, and paſſing them through a ſieve, in order to detect the preſence of ſuch calculi †. We muſt guard, however, againſt confounding ſuch calculi with thoſe which may happen to be contained in the inteſtines ‡. I myſelf have frequently

obſerved calculi, which were truly biliary, thrown off by vomiting.

* Epiſt. xxxvii. n. 31. See alſo Scardona, l. 3. c. x. § 10. Felici *Del preſagio medico*, p. 185. and Haller *Opuſc. pathol. obſ.* 33.

† L. c. n. 44.

‡ Concerning calculi in the inteſtines, and in various other parts of the body, the ſtudent may conſult Scardona, l. c. c. xi. § 1. Manetti, in the notes upon Sauvages's Diſſertations, p. 74. and the *Gazzetta medica d'Oltremonti*, n. xlix. an. 1763, &c.

163. Biliary calculi, therefore, can occaſion icterus only when, in conſequence of their pointed figure, or weight, they injure and ſtretch the gall-bladder *; or when they are compreſſed by external force, or driven into the cyſtic duct by the bile of the gall-bladder, or by the poſition of the body, and compreſſion, inducing ſuch irritation, that even the ductus choledochus becomes ſpaſmodically affected, and prevents the excretion of the bile; or, laſtly, when entering the ductus choledochus, they remain faſt there, and completely obſtruct it. In both caſes, either in conſequence of the gall-bladder being irritated, or in conſequence of its being too much diſtended by the abundance of bile, a dreadful pain is excited in the right hypochondre, and precedes the icterus, or occaſionally returns, cauſing the icterus likewiſe to return, or aggravating it, and making the colour deeper. It is then very properly named *colica icterica*, or *hepatica*. It does not always ariſe from calculi; as it may ſometimes be occaſioned by clots of bile, or any other cauſe obſtructing the ductus choledochus; or by the bile

of the gall-bladder itſelf being too thick, and having become acrid from ſtagnation.

* Calculi ſometimes occaſion hæmorrhages. An inſtance of a branch of the *vena portæ* being burſt by them, will be found in the *Paris Medical Journal* for July 1782.

164. The icteric colic generally attacks adults, and people advanced in life, ſeldom young people; but eſpecially ſuch as are of a bilious, or melancholic temperament, and who lead an indolent and luxurious life, or labour under great mental anxiety. It firſt betrays itſelf by an uneaſy tenſion and weight in the hypochondres, eſpecially ſome time after taking food. It next occaſions a ſenſe of pain, ſometimes obtuſe, ſometimes acute, about the region of the ſtomach, or *ſcrobiculus cordis*, like a cardialgia, with conſtant anxiety at the ſeat of the liver, and an inexpreſſible internal uneaſineſs. But, in a ſhort time, either of its own accord, or in conſequence of ſome carminative being employed, it ceaſes, as if it depended upon flatus, or ſome error in diet. Next day, however, the white of the eye, when attentively examined, and eſpecially at the inner angle, is generally ſlightly yellow, and the urine appears more ſaturated than uſual, and almoſt red; or frequently yellowiſh, or greeniſh ſtools are paſſed; and, when this happens, the colour of which I have now ſpoken does not always ſhew itſelf in the eyes and urine. The complaint occaſionally returns, ſometimes for ſome months, and goes off

in the ſame manner, without occaſioning alarm either to the patient or the phyſician, as there is always ſome manifeſt cauſe, to which it may be eaſily referred, until at length it attacks the patient with greater violence, and diſtreſſes him longer, evidently terminating in icterus. But, as it frequently diſappears in a few days, it is on that account generally conſidered as being *critical*, or *ſympathetic*, and occaſioned by a painful contraction of the duodenum.

165. But the practitioner is not ſuffered to remain long under this fallacy; for, when the icterus has ſcarcely been diſcuſſed, or when it is drawing to a concluſion, in conſequence of any ſlight cauſe, the pain arrives at ſuch a height, and is attended with ſuch a ſenſe of rending and tenſion about the liver, ſtomach, and ſcrobiculus cordis, inceſſant anxiety, and ſuch excruciating pain and ſwelling of the parts affected, that they cannot endure the ſlighteſt touch of the hand; with great ſtraitening of the cheſt; with nauſea and vomiting, or an inclination to vomit. Sometimes the pain ſtretches to the loins and back; ſometimes to the umbilicus and enſiform cartilage*; for the duodenum reaches to the former, and the ligaments of the liver to the latter; ſometimes it excites an acute fever, with a quick and hard pulſe, and diſtreſſes the patients with ſuch excruciating pain, that they can neither ſtretch their limbs, nor recline in any other way, but by bending forward upon their belly. Theſe ſymp-

toms continue ſometimes longer, ſometimes ſhorter; and, as they frequently at firſt come on ſuddenly, ſo they ſometimes depart on a ſudden, and in a moment's time, without any gradual abatement. More frequently, however, they go off ſlowly and gradually, always leaving behind an icteric colour of the whole body, or, at leaſt, of the face and cheſt, together with bound belly, and ſcanty and ſaffron-coloured urine. They go off in a moment's time, when the gall-bladder is emptied, as it were, by a ſingle evacuation. This happens when it pours out the bile with great violence againſt the obſtacle oppoſed to it, forcing them both into the duodenum; or when, while the obſtacle ſtill remains, it forces it back into the hepatic duct and its branches, transfuſing it into the paſſages of the blood. This it effects either by its own power, or aſſiſted by the contraction of the abdominal muſcles and diaphragm. If this take place, not at one effort, but after repeated convulſions, the complaint likewiſe departs ſlowly and gradually. The fæces are generally hard and aſh-coloured, or they have frequently appeared ſo for two or three days immediately preceding the paroxyſm; which is a manifeſt proof of the bile having begun not to paſs into the inteſtines. Sometimes, however, the fæces, at the commencement of the diſeaſe, and when the paroxyſm is ſlight, as ſoon as the latter diſappears, are paſſed yellow and bilious; which,

moreover, indicates that the bile, having at length overcome the obſtructing cauſe, has paſſed into the inteſtines. Theſe impediments are overcome either in conſequence of the dilatation of the paſſages, or of the obſtructing cauſe being forced onwards, whether it be coagulated bile, or a calculus; and it is afterwards detected in the fæces, when diſſolved in water, and paſſed through a ſieve.

* Hoffman *(Medic. Syſtem. Ration.)* obſerves, that when theſe calculi are preſent, *there is a ſenſe of weight at the enſiform cartilage.*

166. Each acceſſion continues one or two, or at moſt three days, which is the longeſt interval. For in this time the pain, oppreſſion, and anxiety of the epigaſtrium and hypochondre, intirely ceaſe, and the patient ſeems to have recovered his former health, in proportion as the ſkin and urine become manifeſtly more clear. Such intervals, however, and the hope they afford, are ſucceeded ſometimes every week, ſometimes every month, ſooner or later, as it may happen, by the ſymptoms already mentioned, juſt in the ſame order; and after frequent and excruciating pains, the icteric colour of the ſkin becomes conſtant; ſometimes, however, having aggravations, but of a milder kind, probably becauſe the paſſages, being gradually rendered more open, are more favourable to the abſorption of bile. The yellow colour of the bile is then gradually diffuſed over the whole body; the mouth becomes bitter, and nauſea takes place; the appetite is not only loſt, but a loathing of food ſupervenes; an intolerable

itching affects the ſkin; the yellow colour becoming darker, approaches to black; the body becomes emaciated; the feet ſwell; and by degrees *aſcites abdominalis* follows.

167. Such is the more common progreſs of the complaint, which, if timely aſſiſtance be not given, is followed by a ſlow but certain death. Sometimes, however, it happens, that the gall-bladder, which frequently is found to be turgid, and diſtended, and protuberates below the margin of the liver, during ſome violent effort, burſts, and, pouring the bile into the abdominal cavity, ſuddenly creates a fatal tympanites. Sometimes, likewiſe, the pain is ſo acute, and the fever ſo violent, that the liver becomes affected with inflammation, which either terminates in gangrene, or a ſpeedy death, or in ſuppuration and abſceſs, or *tabes* *.

* The author has given a very complete hiſtory of the icteric colic, and method of cure to be employed in it, in the work entitled, *Trattato delle acque di S. Chriſtoforo*, &c. from p. 82. to p. 118.

168. From all this we infer, that the ſeat of the icteric colic is to be conſidered as being the gall-bladder, and annexed bile-ducts, and that its proximate cauſe can be nothing elſe than *violent irritation*, or *diſtenſion*, of the gall-bladder, whereof the one is occaſioned either by denſity of the cyſtic bile, conjoined with acrimony, or by calculi in the gall-bladder, or even by lumbrici entering through the choledochus into the gall-bladder, ſuch as Beuth has obſerved *; while the

other proceeds from the bile itſelf being prevented from paſſing out of its bladder, in conſequence of ſome impediment either partially or intirely obſtructing its paſſage, and preventing it from diſcharging itſelf through the common duct into the duodenum. In which reſpect it ſeems to differ from ſimple icterus, unaccompanied with pain; for in it the *hepatic bile* is principally faulty, as it paſſes freely neither to the gall-bladder, nor to the inteſtines; while in the other the *cyſtic bile* in particular is either morbidly denſe and acrid, or abounds with calculi; or being prevented from paſſing the choledochus, it flows back into the gall-bladder, and, being collected there, occaſions the diſeaſe †. In how many ways this may happen, and in what manner ſo diſtreſſing a complaint may be excited, I have already pointed out; and, indeed, it will readily be underſtood by any one who rightly conſiders the ſubject.

* L. c. † See par. 143.

THE PROGNOSIS.

169. THE *yellow icterus* is leſs dangerous than the *black*. The *critical* ſpecies is ſafeſt of all, eſpecially that which ſupervenes in fevers upon the ſeventh, ninth, eleventh, or fourteenth day, if the ſymptoms abate, as Baglivi remarks *; and if the right hypochondre be not hard †, or become ſo ‡, as Hippocrates has obſerved. The *epidemic* complaint, and that which takes place in new-born infants, is eaſily diſcuſſed. This is not

the caſe, if it ariſe from inflammation, ſcirrhus, or calculi of the liver. It is more eaſily cured in young, robuſt people, than in thoſe advanced in life, of a weakly and hectic habit. It is frequently reſolved by a copious diſcharge of thick, turbid urine; by ſweat; by diarrhœa; and by the hemorrhoidal diſcharge. Moreover, the *ſymptomatic* complaint generally portends death; but we muſt except that ſpecies which is occaſioned by intermitting fever; for, when the fever is removed by means of the bark, it alſo diſappears. Nor is there much reaſon to apprehend danger from that which is occaſioned by hyſteria or hypochondriaſis, or merely by pregnancy; for, upon the ſpaſms being allayed, or after delivery, it quickly ceaſes. That which ſucceeds to *induration of the ſpleen*, and is *black*, is not free from danger. Moreover, it is generally fatal, if ſingultus, coma, or the vomiting of black bile, or blood, ſupervene. Likewiſe that which is of *long ſtanding*, on account of the danger of emaciation, hectic fever, or dropſy being induced, is not void of danger. It is likewiſe not unfrequently ſucceeded by ſeyere pains in the abdomen, and by a copious diſcharge of blood by the mouth and by ſtool, cauſing fainting and death. It is probable, that then a cancerous acrid ichor has eroded the veſſels ‖. For when the bile remains long in the blood, it induces a putrid and alkaleſcent diſſolution. Valſalva obſerved an icterus occaſioned by great

agitation of mind, accompanied with delirium, deep ſleep, fever, and convulſions, prove fatal upon the fourth day §. The ſame author mentions that another perſon who had been attacked with jaundice the day after having been expoſed to ſudden and violent terror, being ſhortly after ſeized with delirium and convulſions, died within twenty-four hours ¶. The icteric colic, although long continued and obſtinate, if it be properly treated, and if we have not to contend with any taint of the viſcera, or if the patient be not advanced in life, not unfrequently yields to remedies. Hippocrates obſerves **: "When a fever ſupervenes in patients whoſe liver is affected with great pain, it removes the pain." This is frequently true in the *icteric colic*; for the fever generally depends upon the evacuation of the gall-bladder, and upon the return of the bile into the blood. I do not deny, however, that ſometimes apoplexy has been ſuddenly occaſioned by the yellow jaundice, or by calculi of the gall-bladder. The hæmorrhages, which frequently ſupervene upon icterus, are allayed, as Huxham obſerves ††, by a decoction of hemp-ſeed in milk, by an emulſion of the ſeeds of white poppy and ſweet almonds, after a ſlight bleeding, if a degree of fever require it, and the pulſe bear it, and after the belly having been previouſly gently purged.

* *De criſi, et diebus criticis, &c.* † Aphor. 64. ſect. vi. ‡ Aphor. 42. ſect. *ead.* || Van Swieten, § 946. § Morgagn. *epiſt.* 37. n. 2. ¶ *Id. ibid.* ** Aphor. 52. ſect. vii. †† *De aere, et morbis epidem.* T. i. p. 412.

THE CURE.

170. In pléthoric perſons, or ſuch as labour under the ſuppreſſion of any evacuation; in *hepatitis*, or when it is apprehended; and in pregnancy; the cure ought to be begun with bleeding. When the bile is too abundant, thin, or acrid, it ought to be corrected and evacuated by acidulous diluents, and cooling cathartics; by whey; by the juice of lemons, ſorrel, endive, and ſuccory; by cream of tartar; and by tamarinds diluted with a large quantity of water. If viſcidity, ſluggiſhneſs, and denſity of the bile, be in fault, if the liver be obſtructed, all the aperients already mentioned in Chap. XII. are moſt ſuitable, and eſpecially the neutral ſalts, and likewiſe Venice ſoap, inſpiſſated bullock's gall, and laxatives; as rhubarb, and ſoluble, or vitriolated tartar, or Epſom ſalt. Sea-water, and St Chriſtopher's water, or water any how impregnated with ſalt, are deſervedly claſſed among the beſt remedies. Children and infants, eſpecially if the diſeaſe proceed from the meconium, derive advantage from the ſyrup of ſuccory, with rhubarb, and from a decoction of the root of graſs. Spaſms, if the diſeaſe proceed from them, are beſt alleviated by means of oily things; by emollients; by opium; and by antihyſterical remedies. The icterus which is occaſioned by poiſons, poiſonous bites, fevers *, and other diſeaſes, requires the ſame method of cure as the primary diſeaſes.

* Scardona was very ſucceſsful in curing an icterus, which ſupervened upon long continued and irregular tertian and quartan fevers, by employing the following electuary: *Rec. chin. chin. ſ. p. unc.* j. *ſal. abſynth. ſal. ammon. arcan. duplic. extract. rhabarb. ana drach.* ij. *M. et c. s. q. ſyrup. de cichor. cum rheo f. electuar. cap. mane ad drach.* ij. *Superbibend. decoct. theiform. ſummit. abſynthii, fol. verben. chamædr. agrimon.* It is likewiſe calculated for removing obſtinate tertians and quartans. Lib. iii. cap. 5. § 31.

171. In the icteric colic, the firſt and chief part of the cure is, to endeavour, when the pain is moſt urgent, to allay the *ſpaſm*, to free the biliary paſſages, and to make whatever adheres in them paſs through the *ductus choledochus* to the inteſtines. In the ſecond place, after the pain has ceaſed, we muſt endeavour to guard againſt its return; which is to be effected by thoſe remedies which either diſſolve *, or expel, or prevent concretions and calculi. But each of theſe parts of cure muſt be accurately diſtinguiſhed; nor muſt the different ſtages be confounded. Nearly the ſame method, in ſhort, ought to be obſerved in this diſeaſe, as in the treatment of urinary calculi †.

* Durand (*Mem. de l'acod. roy. de medec.* T. i. p. 288.) mentions, that two cures of biliary calculi were performed by means of a mixture of vitriolic ether and ſpirits of turpentine. But Gouner, in an expreſs diſſertation upon *biliary calculi*, (*See Theſaur. diſſert. med. rarior.* vol. ii. ann. 1784, p. 191.), mentions, that after having inſtituted experiments for the purpoſe, he diſcovered that there is nothing poſſeſſed of the property of diſſolving theſe calculi, not even the mixture already mentioned. He grants, however, that ſome effect is produced by the *terra foliata tartari*, by *alcohol*, and by the ſame conjoined with the naphtha of nitre, by the ſweet ſpirit of nitre, and by the antiſpaſmodic ſpirit of Protes. But he could not confirm the praiſes

which Murray has beſtowed upon alcohol, ſaturated with the etherial oil of turpentine, and formerly recommended by Percival. Inſtances of calculi of the gall-bladder having been extracted by means of an inciſion, are to be found in the Medical Commentaries of Leipſic, vol. iv. pag. 478. See Schulze's diſſertation. An dentur medicamenta, quæ calculum in veſica comminuant? *Ibid.* vol. vi. par. 2. p. 232.

† See the Edinburgh Phyſic. Eſſays, vol. i. art. 33. and Morgagni, epiſt. 37.

172. When, therefore, the pain has come on, we muſt have recourſe to the repeated employment of oily, emollient, diluent, demulcent, and anodyne remedies; and, when it is very violent, likewiſe to ſuch as contain opium. Nor muſt we omit fomentations, cataplaſms, the vapour-bath, anointing the patient, and clyſters which prove emollient and antiſpaſmodic. But, if plethora be preſent, or if fever ſupervene, bleeding will likewiſe be proper, not only to prevent inflammation, but alſo that the narrowneſs of the paſſages may not be increaſed by the turgeſcence of the veſſels. Moreover, as all thoſe things which prove emollient and ſedative are recommended, ſo ſuch as prove irritating are conſidered as very ſuſpicious, of which kind are emetics and purgatives, although obſtacles are ſaid to have ſometimes been removed by their means. For unleſs the paſſages have been ſufficiently relaxed, which cannot be certainly aſcertained, according to Hoffman, Roverhorſt, Scheffel, Morgagni *, and others, they are generally hurtful, or at any rate of ambiguous efficacy.

* Epiſt. 37. n. 44. *et ſeq.*

173. Biliary concretions are powerfully diſſolved by tepid watery drink; by ſpirit of wine mixed with ſpirit of turpentine; by the juice of graſs and dandelion; by honey; by ſoluble tartar; by Venice ſoap; by the root of the *pareira brava*; by the tincture of the ſalt of tartar; by the ſaline mineral waters; and, laſtly, by gentle friction applied to the region of the liver and gall-bladder. Gentle cathartics interpoſed, and eſpecially rhubarb, the *tinctura ſacra* of Lemery, and cream of tartar, diſpoſe the calculi for excretion and paſſing into the inteſtines. But of all things moſt advantage is to be derived from the long continued employment of aperient and emollient vegetables, by which alone I have known many ſucceſsful cures performed *. By theſe means alone I have obſerved the return of the diſeaſe prevented; with which view all thoſe things which prove ſtrengthening, and remove the prediſpoſing cauſes, ought to be employed for a long time. Vitriolic ether, mixed with equal parts of the oil of turpentine, to prevent its flying off, is celebrated as an efficacious ſolvent of biliary calculi. A ſmall ſpoonful of this mixture in coffee is given morning and evening †. The efficacy of millipedes, likewiſe, in the cure of icterus, is conſiderable, as Willis and Ettmuller affirm. The former of theſe employs the following formula: Rec. *milliped. viv. n.* 50. *vel.* 60. *croci orientalis ſemidrachmam, nucis moſchatæ drachman unam. His una contuſis affund.*

aqu. chelidon. unc. iv. *F. expreſſio, et bibatur.* But Lange† adviſes paying attention to the doſe; for he aſſures us, that in young patients an hæmoptyſis is induced by the alkaline ſalt with which theſe inſects abound‡.

* Van Swieten, (§ 950.), by employing the juice of graſs and whey in the ſpring-time, Spa water during the ſummer, and Venice ſoap in the winter, for the ſpace of two years, ſucceeded completely in removing an icterus, under which a woman had laboured for twelve years.

† Morveau's *Elements of Chemiſtry*, vol. iii. and the *Nuovo magazzino Toſcano*, vol. viii. p. 30. *See the obſervations adduced in the note upon par.* 171. *taken from the author's papers.*

‡ *Miſcel. veritat.* faſcic. 1. p. 56.

|| To the other remedies, I may add one propoſed by Greding. A maſs is prepared by eight parts of the extract of belladonna, and five parts of the powder of its leaves; of which pills of a grain and a half each are prepared. One is given at a time in an obſtinate caſe of icterus. The effects are, remarkable heat, violent pulſation of all the arteries, giddineſs, copious ſweat, green ſtools, and a diſcharge of urine. A cure is ſaid to have been obtained by means of this remedy within ten days. *Com. med. Lipſ.* xix. p. 121.

CHAPTER XIV.

CONCERNING INFLAMMATION OF THE LIVER, SPLEEN, PANCREAS, OMENTUM, AND MESENTERY.

HEPATITIS.

174. INFLAMMATION of the liver is named *Hepatitis*; a diſeaſe not ſo frequent among us, as in the Eaſt and Weſt Indies, where Vogel *, on the authority of Home and Lind, mentions its prevailing epidemically. But Ferrein † contends that it is of very frequent occurrence, and that the

ſmaller lobe is more frequently affected than the larger. The *venous* ſpecies, namely, that which is ſeated in the branches of the vena portarum, diſtributed over the liver, is of leſs frequent occurrence than the *arterious*, and, if Ludwig be credited, eſpecially that which attacks the ſurface of the liver, and annexed membranes.

* *Prælect. de morb.* § 218. † *Hiſtoire de l'acad. roy. des ſcienc.* an. 1766, 67, 68, p. 121.

175. The uſual remote cauſes of the complaint I have already pointed out elſewhere. The cauſes which are in a manner peculiar to it are the choleric and melancholic temperament; hypochondriaſis; biliary calculi; the icteric colic; thick or acrid bile; violent anger; ſuppreſſion of the hemorrhoidal diſcharge; ardent, bilious, continued, or intermitting fevers; metaſtaſes; a ſevere blow given to the liver; &c. Likewiſe, the ſymptoms of other inflammations ought to be transferred to this place; namely, continued fever, thirſt, heat, pulſation of the arteries, and the like. But the ſymptom which is conſidered as being in a manner pathognomonic *, is a pain which is excited or increaſed upon preſſing any part of the liver. It muſt therefore be examined by the hand, while the patient lies upon his back, with his knees retracted in ſuch a manner, that the abdominal muſcles may be relaxed, and yield to the hand.

* Ferrein, l. c.

176. The pain is ſituate chiefly in the right

hypochondre and epigaſtrium, which are ſwelled, but without any change of the external colour, being ſometimes violent and conſtant, ſometimes tenſive and pungent, ſometimes alſo obtuſe and deep ſeated, and is often propagated on the right ſide to the cheſt, neck, and ſhoulder of the ſame ſide. Sometimes it occaſions a numbneſs likewiſe in the right hand, and renders lying upon either ſide, but eſpecially upon the left, uneaſy. On account of the vicinity and connection of the diaphragm, the reſpiration is affected; the inſpiration particularly is more difficult; a dry, frequent, and ſhort cough, aggravating the pain, comes on; whenever food is taken, a ſenſe of great fulneſs is excited; anxiety of the præcordia; a weak pulſe, and frequent fainting, take place; ſometimes the ſtomach and duodenum, being drawn into conſent, bilious vomiting, diarrhœa, and a hiccup, which proves nearly ſuffocating to the patient, are ſuperadded.

177. If the convex part of the liver alone be affected, it is probable that the diaphragm and reſpiration ſuffer greater injury, and that the icteric colour is then abſent. If, on the other hand, the affection be confined to the lower ſurface, we conclude that the ſtomach and duodenum are chiefly affected, that icterus with bound belly takes place, and that the pulſe is weaker, and the fainting of more frequent occurrence *. For icterus ariſes from the compreſſion, or ſpaſmodic conſtriction, of the ductus choledochus; but the

weakneſs of the pulſe, and the fainting, ſeem to be referable not only to ſpaſms, but likewiſe to the return of the blood through the *vena portarum* to the *vena cava* and heart being interrupted. Ferrein, beſides the pathognomonic ſymptom already mentioned, (175.), and the fever, contends that an effect of this diſeaſe is likewiſe a pain which reſembles cardialgia †.

* See a caſe of icterus, accompanied with ſuppuration of the liver, deſcribed in the ſecond volume of the *Edin. phyſ. eſſays*.

† L. c.

178. Not unfrequently *hepatitis* reſembles inflammation of the ſtomach, or *pleuriſy*. Sometimes, alſo, *gaſtritis*, or *pleuriſy*, or *peripneumony* is conjoined with *hepatitis*. Sometimes peripneumony, or other diſeaſes of the lungs, put on the appearance of hepatitis. Which is apt to miſlead not only novices, but likewiſe practitioners of long experience. For Valſalva, (as Morgagni relates *), and Sarcona †, miſtook inflammation of the lungs for hepatitis. As inflammation of the right ſide of the lungs may ſo increaſe its ſize, eſpecially when it affects the lower part, as to force the diaphragm and liver downwards. In that caſe, the pleuritic pain will be ſituate lower down, and will ſeem to occupy the uſual ſeat of the liver. An obſervation of Sarcona, however, ſhews that both diſeaſes were rather conjoined; namely, one terminating in *ſuppuration*, and the other in *reſolution*, as the *increaſed ſize of the liver* ‡ ſeemed to indicate.

* *Epiſt. anat. med.* xx. n. 30. 31. † Part i. p. 208.

‡ Among the author's papers ſome obſervations reſpecting increaſed ſize of the liver were found, which ſeem worthy of being tranſcribed here, as from them we find what the morbid nature of the complaint is, and what its plan of cure ought to be, whether the diſeaſe be of the acute or chronic kind.

"Dr Crawford obſerved an *enlarged liver*, unaccompanied with any morbid condition, which he carefully deſcribed, an. 1771. The ſymptoms delivered by him there are as follow: The abdomen all of a ſudden becomes much ſwelled and hardened, without any undulation being perceived on ſtriking it. The reſpiration is very difficult, which is the principal ſymptom. It is preceded by total loſs of ſtrength, by a ſenſe of conſtriction in the cheſt, and by vertigo upon any motion of the body. An œdematous ſwelling of the legs and feet ſucceeds; the back is pained; there is preſent unquenchable thirſt and loathing of food. The pulſe is weak and ſmall, but after bleeding becomes greater, fuller, and more diſtinct. The face is red and flushed. As the ſwelling of the belly increaſes, the dyſpnœa, likewiſe, is aggravated. Theſe two ſymptoms, a few days after the firſt invaſion of the diſeaſe, become exceedingly troubleſome. Shortly after, the patient complains of an oppreſſion at the region of the heart, and a conſtriction under the enſiform cartilage, which become intolerable, and in a ſhort time occaſion ſuffocation. Vertigo ſometimes comes on, ſo that the patient cannot ſtand, and is obliged to go to bed, to avoid fainting. Some at this time feel a palpitation of the heart. Diſſection diſcovers immenſe bulk of the liver occupying both hypochondres, and deſcending to the epigaſtrium. The upper part forces up the diaphragm, and thus compreſſes the lungs. The diſeaſe is acute, and is cured by bleeding and repeated purging."

"J. F. de Villiers, in his notes upon the *London Practice of Medicine*, p. 223, mentions, that ſometimes the chronic complaint ariſes from the ſame morbid ſtate. In that caſe, it comes on in conſequence of the gradual congeſtion of blood both in the *liver* and *ſpleen*. Women, eſpecially after their menſes have left them, are liable to it. Theſe two viſcera are gradually enlarged, or one or other of them. The patient is ſhortly ſeized with aſthmatic attacks, with weight, pain, and heat at the region of the ſtomach, eſpecially after food, at which time the vapours riſe towards the head. Generally coſtiveneſs accompanies the complaint,

which aggravates its ſymptoms. It is only when ſuch viſcera are increaſed in bulk, ſo as to fall into the hypogaſtric region, that the phyſician is conſulted; becauſe the patients can then no longer reſpire, nor bear the weight of the abdomen. While this complaint is forming, which frequently happens during the ſpace of ten years, the ſyſtem ſometimes endeavours to free itſelf by an epiſtaxis, ſometimes by an hemorrhoidal diſcharge, but always does it imperfectly. The body and pulſe are languid; but bleeding and two or three purges rouſe the ſtrength and pulſe. It then becomes hard and full, and there is therefore need of a ſecond bleeding, and other evacuations. A bliſter applied to the part affected is not without utility. Willis, alſo, may be conſulted concerning this diſeaſe."

179. Hence all the ſymptoms muſt be weighed with the utmoſt care, that no room may be left for miſtake; or, at leaſt, it will be moſt prudent to refrain from too precipitate a judgment. Hepatitis, like other inflammations, terminates either in health, or in death, or in other chronic diſeaſes. That hiccup which ariſes from inflammation of the liver, is pronounced by Hippocrates to be a bad ſymptom. The abſceſs ſometimes points outwards, and growing to the pericardium, requires the aid of ſurgery *. It is ſpontaneouſly reſolved by a copious diſcharge of turbid urine; by ſweat; by diarrhœa; by a diſcharge of blood from the noſe, or from the hemorrhoidal veins; by vomiting; and ſometimes alſo by expectoration. Death is occaſioned, if pus be poured into the cavity of the abdomen, or into that of the cheſt. In the body of a man, who, after the removal of an icterus, complained of pain at the liver, and loſs of ſtrength, Portal found, beſides a purulent colluvies in the abdomen, and corrup-

tion of the omentum, the liver enlarged in its lower part, and containing a great abſceſs, abounding with foul pus; and the part of the colon next it was alſo in a ſtate of putrefaction †. Van Swieten mentions, that frequently hepatitis is conjoined with intermitting fevers, and paſſes into the worſt kind of dyſentery, eſpecially if the fever have been prematurely cured by the bark ‡. But, with deference to ſo great a name, that evil may be frequently prevented by means of the peruvian bark, as I have elſewhere ſhewn, and as has been obſerved by others as well as myſelf.

* See *a treatiſe concerning abſceſſes of the liver*, in vol. ii. of the *Mem. de l'acad. roy. de chirurg.* &c. † *Hiſt. anat. med.* vol. i. p. 163. ‡ § 946.

SPLENITIS.

180. INFLAMMATION of the *ſpleen*, alſo, is properly denominated *ſplenitis*. The *genuine* and *primary ſplenitis* more rarely occurs, while the *ſecondary* ſpecies, and that which ſupervenes upon obſtruction of the ſpleen, is not unfrequent. In that caſe, the left hypochondre is affected with pain, ſometimes at the left part of the colon, or at the clavicle, or even in the ſcapula, and ſhoulder of the ſame ſide. Likewiſe an obſcure pain, or ſometimes even a lancinating and acute one, paſſes to the falſe ribs. Sometimes it ſtretches to the epigaſtrium. The ſwelling reſembles the figure of the ſpleen, does not admit of being touched, and ſometimes prevents the patient

from lying on either ſide. Symptoms of *pleuriſy* are frequently preſent *, while thoſe of *nephritis* are abſent. If an abſceſs or ulcer take place, it may be diſcovered by nearly the ſame ſymptoms as an abſceſs of the liver. Sometimes a bony covering of the ſpleen, occaſioned by the duration of the complaint, is found on diſſection †.

* See Part I. of this Volume, Chap. IV. † Morand. *Com. acad. Par.* vol. vii. p. 188.

181. The ſymptoms of inflammation of the *pancreas* and *omentum* are very obſcure; but they are derived from the conſideration of the ſituation of theſe viſcera, and of the functions which are injured *. Inflammation of the meſentery is frequently conjoined with *enteritis*, and occaſions ſimilar ſymptoms. Sometimes it is lingering, and accompanies the *tabes meſenterica*, as it is called †. The pain occupies the whole umbilical and lumbar regions.

* Columbus obſerved an abſceſs in the *omentum* and *peritonæum* of a woman labouring under aſcites, without any injury to the liver and ſpleen. *De re anat.* lib. 15. p. 491.

† Concerning the *tabes meſenterica*, and ſimilar complaints, ſee Chap. III. Part I. Vol. IV.

THE CURE.

182. THE cure of hepatitis is performed by bleeding, emollients, and aperients, as alſo by gently purging the belly *. If the practitioner foreſee that a critical diarrhœa is about to happen, he ought to promote it gently by means of emollient injections; by fomentations applied to

the loins and abdomen; by drink, conſiſting of purified whey, with the root of elder, or ſyrup of citron; by decoctions of the ſubacid and reſolving plants, as, the pulp of tamarinds, or the fruits of caſſia, honey, nitre, cryſtals of tartar, and the like. Acrid purges, which would be apt to increaſe the inflammation, are contra-indicated. When itching of the noſe, redneſs, and ſwelling of the face, and the *pulſus dicrotus*, announce the approach of an hemorrhage, it is very advantageous by means of fomentations and vapours to relax the fore-head, internal nares, and neighbouring parts. Moreover, the elimination of the inflammatory matter proceeding from the ſurface of the body, like ſweat, is excellently promoted by means of the gentle heat of the bed, teil-flowers, or a ſtrong infuſion of elder, drunk off copiouſly, or by whey taken warm. But, if a criſis begin to take place by means of a diſcharge of urine, or by the expectoration, the mildeſt diuretics and expectorants ought to be employed, while we never loſe ſight of the caution of Hippocrates, *Quæ duceri oportet, ducenda ſunt quo maxime vergat natura per loca conferentia*; and in the way which is moſt agreeable to nature. Hepatitis may likewiſe be reſolved by the hemorrhoidal or menſtrual diſcharge; which evacuations, provided they be not exceſſive, it will be of the greateſt ſervice to promote. But more ſevere inflammations of the liver muſt be treated by the

ſtricter antiphlogiſtic regimen, elſewhere deſcribed *, with the probable view of preventing an abſceſs, which is much to be dreaded. When only the ramifications of the vena portarum are inflamed, bleeding will be productive of very little effect. In which caſe, leeches ought to be applied to the external hemorrhoidal veins, which communicate by means of anaſtomoſes with the internal, and conſequently with the vena portarum. A decoction of arnica, with its flowers, after bleeding in the part next to that affected has been premiſed, is preferable to other remedies, —from whatever cauſe the ſtagnation of the blood may proceed,—for removing the inflammation ‡. Baglivi, for preventing gangrene in inflammations of the internal viſcera, ſets great value upon decoctions of the root and leaves of ſcabioſa ‖. If the concave part of the liver be affected, epiſpaſtics applied to the right hypochondre are ſcarcely of any ſervice. However, when other remedies fail, theſe may alſo be tried. Frequently, when the fever is diſcuſſed, whatever ſwelling remains is reſolved by vegetable balſamic remedies, as turpentine, balſam of *copaiva*, &c. In ſhort, the practitioner ought not to deſiſt from his endeavours, until both the liver and the whole body have been ſufficiently cleanſed.

* Ferrein, l. c. † See the *Commentary upon Inflammation*, Vol. I. and Par. i. Vol. IV. Chap. iv. and elſewhere. Likewiſe, *Diſputat. acad. Gineſii Roſſi, &c. præſide J. B. Burſerio, de præcipuarum partium inflammationibus, Ticini habita*, 1771.

‡ Lange, (*Miſcel. verit.* faſcic. i. p. 69.), who there cautions

tis againſt admitting in place of the arnica the *aſter luteus*. The *arnica foliis carnoſis, craſſis, et diſco floris lanuginoſo*, is diſtinguiſhed from all other kindred plants.

‖ *De febrib. malign. et meſentricis*, &c.

183. There is no eſſential difference between the cure of *hepatitis* and that of *ſplenitis*, except the topical remedies applied to the left hypochondre, and the firſt bleedings, which, in the opinion of ſome, ought to be performed in the left arm. By the way, I would wiſh the ſtudent to obſerve, that no certain diagnoſis between inflammation of the *pancreas*, *omentum*, and *meſentery*, can be formed at the beginning; for the more ſevere ſymptoms are abſent, the fever is ſlight, the pain obſcure, and there is ſcarcely any internal heat or thirſt, in conſequence of which patients labouring under them are ſtill enabled to go through their uſual occupations. But when the inflammation of theſe parts is very ſevere, it is ſubdued by nearly the ſame antiphlogiſtic remedies as thoſe formerly enumerated. In one word, theſe affections require the ſame remedies which are employed in the cure of *pleuriſy*. If there be any difference, it will be pointed out by the obſervations already delivered concerning *icterus*, *gaſtritis*, and *enteritis* *.

* See the preceding Chapters, VI. VII. VIII. and XIII.

CHAPTER XV.

CONCERNING NEPHRALGIA, OR NEPHRITIC PAIN, AND URINARY CALCULI.

184. EVERY pain affecting both kidneys, or one or other of them, which is of more frequent occurrence, is named *nephralgia*, or *pain of the kidneys*, or *nephritic pain*, as alſo *nephritic colic*. Some pains of the kidneys are comprehended under the ſingle name of *nephritis*, which is divided into *true* and *falſe*. The *true* ſpecies is that which is occaſioned by *inflammation of the kidneys*; the *ſpurious* is that which is occaſioned by other cauſes. But, as every pain of the kidneys, from whatever cauſe it be derived, differs merely in the ſeverity of its ſymptoms, it is better to name them, of whatever kind they be, *nephritic*, and, for the ſake of perſpicuity, to divide them into *inflammatory*, and *not inflammatory*; and to ſubdivide each of theſe again into *ſanguineous*; *rheumatic*; *arthritic*; *calculous*; *convulſive*; *ulcerous*; *purulent*, &c. according as blood, acrid ſerum, gout, rheumatiſm, calculus, and ulceration, or abſceſs, have occaſioned them.

185. The cauſes in common to other pains have likewiſe a place here; but ſuch as are conſidered as being more peculiar to this complaint are, contuſions; wounds; abſceſſes; ulcers *; ſwellings; congeſtions of blood; too great an appulſe of acrid, arthritic, rheumatic, ſcorbutic,

and venereal ſerum; ſtagnation of the urine, on account of the paſſages being obſtructed; violent exertions; long-continued riding on horſe-back, or in a carriage; long lying upon the back; ſpaſmodic affections of the nerves; calculi ſticking in the pelvis of the kidneys †, or ureters, or obſtructing the paſſage; an hereditary taint; immoderate venery; acrid diuretics, and eſpecially thoſe prepared with cantharides, as well as the immoderate employment of theſe externally.

* "A girl of twelve years of age for three months endured a pain in the region of the kidneys, which ſtretched all the way to the thighs, attended with *ardor urinæ*, and acrimony of it, a copious purulent matter in the urine, thirſt, hectic heat, and conſumption, and with the *facies Hippocratica*, ſo that ſhe could neither raiſe herſelf, nor walk. It was ſuppoſed that the ulcer of the kidneys was recent, on account of the pain attending it. The following remedy, therefore, was preſcribed: Rec. *Rhabarb. ſemidrachm. ſpermat. ceti, baccar. lauri ana ſcrup.* j. *opobalſam. gutt.* x. *terebinthinæ chiæ q. s. ut f. pilulæ mediocres. Sume* iv. *mane et veſperi, ſuperbibendo hauſtum poſtetici radicib. althææ alterati. Sumat pro potu decoct. hordei ſyrupo althææ q. s. edulcatum: et duabus noctibus continuis pilul. Matthæi dimid. ſcrup.* The pain was alleviated by means of one of the *pilulæ Matthæi*; and the thirſt was allayed by means of barley-water. The hectic heat and the acrimony of the urine were corrected by it, and by the ſyrup of marſhmallows were determined to the urinary paſſages. The rhubarb proved detergent and cleanſing, and the reſolving quality of the ſpermaceti had the ſame tendency. Turpentine and the opo-balſamum ſerved to ſtrengthen the relaxed parts. The addition of laurel-berries removed the pains of the belly and nauſea. Within a month, theſe remedies enabled the patient to riſe out of bed, and walk about; and within three months ſhe recovered intirely. But it was neceſſary to perſiſt in them conſtantly, nor were any other remedies employed." Hamilton, *Prax. med. reg.* p. 18.—21.

† Among the author's papers, we found the following caſe, which has been extracted from the *Edinburgh Phyſical Eſſays*.

"A man of fifty-three years of age, of a ſtout, muſcular habit, and with very turgid veins, chiefly thoſe in the arms, four years ago began to be affected with violent pains, occupying the right ſide, towards the region of the right kidney, which were never intirely abſent. Sometimes, however, they remitted at intervals, and in other reſpects he was in good health. He employed a variety of remedies by the advice of Pitcairn, and other phyſicians, but without effect, except warm water to the extent of twelve pounds, which afforded ſome relief. He was frequently for whole months ſo haraſſed with diſtreſſing pains, that he was obliged to lie upon a ſingle ſheet ſpread on the floor, and derived ſome relief from ſtrongly preſſing the ſide affected to the floor. Whatever urine he voided, during the violence of the pains, ſhortly afterwards put on the appearance of the white of an egg. He was likewiſe liable to frequent diarrhœas, which were unaccompanied with pain, and could then contain himſelf for the ſpace of a day. He could alſo then allow the urine to accumulate in the bladder until it was filled; and, when he made water, he ſometimes paſſed, at one time, not leſs than ſix pounds. He employed various articles of diet, and different kinds of drink; ſuch as eggs, butter, roaſt meat, ſpirituous and aromatic drinks, white wine, &c. all of which excited the pains. Small beer alone afforded him any relief; of which he, therefore, frequently drank. About the beginning of the year 1731, he was affected with a ſevere expectoration, which ſucceeded to a waſting, and, on the 29th of March he expired, although he had never before been affected with any pulmonary complaint. Upon diſſection a ſtone was found in the pelvis of the right kidney, half an ounce in weight, of a triangular figure, and having its ſurface rough with granulations. In the ſubſtance of the kidney was another ſtone of ſmaller ſiz e,weighing only 16 grains, and of an irregular ſquare figure. Beſides theſe two concretions, there were various others of the ſame kind, but particularly in the excretories of the glands. Many of theſe were equal in bulk to a large-ſized grain of ſand." See Douglas, *ibid.*

Concerning the formation and commencement of *calculus*, whoever is deſirous of greater information, may conſult Boerhaave, § 1415.; Haller, in his *Opuſc. Pathолog.*; Geoffroy, *Mat. med.* vol. 1. p. 51.; Scardona, L. iii. c. xi. § 11.; and the *Comment. med. Lipſ.* vol. vi. P. iv. p. 628. and ſeveral others.

DIAGNOSIS.

186. THE pain is felt in the loins, affecting ſometimes the right, ſometimes the left ſide, and ſometimes both, according as one or other, or both kidneys, are affected. Sometimes it is obſcure, and occaſions a ſenſe of weight; at other times it is acute and throbbing, and increaſes when the body moves ſo as to ſtretch the loins. Beſides, the pain is propagated along the ureters to the bladder, and the teſticles of the ſame ſide are frequently retracted. This, however, is generally referred to the ſpaſm which takes place. Some, however, but chiefly Rutty, an Engliſh writer, affirm, that this takes place on account of the ureters paſſing under the *vaſa deferentia*, and therefore preſſing upon or irritating them, ſo that being contracted they draw up the teſticle. Laſtly, a numbneſs of the leg comes on, in conſequence of compreſſion of the crural nerves. For the pſoas muſcles and internal iliacs being ſpaſmodically affected, ſtrangulate the nerves themſelves *. But the urine is ſometimes ſcanty and red; ſometimes pale and watery; ſometimes thin and fiery; ſometimes acrid, and emitting a lixivial ſmell; ſometimes fetid, purulent, mucous, and abounding with ſand. The belly is generally looſe; but during the height of the pain it becomes bound, and flatulent. Very frequently, however, on account of the ſympathy of the nerves, to theſe ſymptoms are added vomiting, or a deſire to vomit.

* See *Tab. Euſtach.* xix. and Van Swieten, *De nephrit.*

187. All of which ſymptoms, if inflammation occaſion the pain, or if the pain have terminated in it, are then frequently aggravated, and an acute fever, accompanied with a hard pulſe, is at the ſame time preſent. But as moſt frequently calculi occaſion the nephritic pains, (for although calculi have been diſcovered every where in the body *, they are chiefly found in the kidneys and urinary bladder), it may be ſerviceable to treat of theſe at ſomewhat greater length. And in the firſt place, according to the diverſity of the ſituation in which they are placed, and figure which they aſſume, they occaſion ſome variation in the pain. For when they ſtick in the kidneys, and are ſmooth and round, they occaſion rather an obtuſe and heavy pain; on the other hand, if they be rough, angular, or pointed, one which is more acute and ſevere; and it is particularly aggravated, when they paſs from the kidneys into the ureters; nay, it generally becomes extremely acute, when they paſs the narrow diameter of the ureters next the bladder, and fall into it. When they find more room in the bladder, the pain ceaſes, or only a ſenſe of weight, or ſome difficulty in paſſing the urine, or a frequent deſire to make water, is felt.

* Columbus obſerved calculi in the kidneys, in the lungs, in the liver, in the vena portarum, in the bladder, in the hemorrhoidal veins, in the umbilicus, and in the gall-bladder (*De re anatom.* lib. xv. p. 491.). Littri alſo obſerved a ſtone in the cavity of the abdomen (*Mem. de l'acad.*); and J. G. Kruger obſerved another

calculus formed in the palate. See *Comment. acad. ſcienc. Petropolitanæ*, vol. i. par. iv. p. 374.

188. It muſt be obſerved, however, that the pains occaſionally, or ſometimes on a ſudden, ceaſe, if the calculus attempting a paſſage into the ureters be again forced back into the pelvis by their ſpaſmodic contraction, or paſs from a narrow to a wider part (for the width of the ureters is frequently not uniform), or if it acquire a poſition better calculated for paſſing. With reſpect to the ſeat of the pain, and condition of the urine, when calculi occaſion the complaint, it is obvious that the former follows the courſe of the ureters towards the bladder and teſticles; and that the latter muſt be various, being generally at firſt thin and ſparing, or ſometimes altogether ſuppreſſed, while in the progreſs of the calculus, or when it has already paſſed into the bladder, it becomes copious, turbid, frequently depoſiting a ſandy ſediment. Not unfrequently alſo the urine is tinged with ſome blood; but that happens only when the calculus has wounded the veſſels of the kidneys, or other parts, through which it paſſes.

189. It is to be remarked, however, that ſuch ſandy ſediment does not always afford a proof of the preſence of calculus. For ſometimes it is altogether abſent while a calculus is preſent, which has ſometimes been found in the kidneys, without having been preceded by either pain or ſand in the urine *. Laſtly, that ſand denotes calculus, or is referable to calculous concretions, which ſub-

ſides immediately after the urine is paſſed, is not exactly mixed with the urine, and when rubbed between the fingers, cannot readily be reduced to a powder †. The ſand which wants thoſe marks in general may be conſidered as being only a ſymptom of a ſcorbutic and hypochondriacal affection. Let theſe remarks concerning calculi of the kidneys ſuffice.

* In the bodies of ſuch perſons as, during their life, had never experienced either *dyſuria*, or *iſchuria*, pain of the loins or thighs, or ſimilar nephritic affections, calculi and ſmall ſtones, according to Bonn, have been found. *De off. med.* cap. i. p. 14. edit. Lipſ.

† See the note upon par. 269. Vol. IV. taken from Morgagni, where the author has delivered his remarks at greater length upon this ſubject.

190. We muſt now proceed to the ſymptoms by which *calculus veſicæ*, when it has acquired conſiderable ſize, is generally diſtinguiſhed. If not all, the greater number of the ſymptoms which follow, take place. There is a weight in the perinæum; ſome impediment in making water, in conſequence of which frequently the flow of urine is interrupted; it is more eaſily diſcharged when the body is ſupine, and the knees are drawn up towards the belly; there is teneſmus, or a frequent deſire to make water and go to ſtool together, an uneaſy pain and itching at the glans penis, pretty frequent rigidity of the latter, and the ſenſation of a body moving in the bladder, when a perſon lies down, or is ſuddenly ſhaken. When the ſtone has in-

creaſed, riding and quick motion cannot be endured, and the urine is then paſſed mixed with blood. But when the complaint has been of long ſtanding, the urine depoſits much mucous jelly, like albumen, at the bottom of the pot. Theſe ſymptoms, however, either are not always preſent, or are not conſidered as being unequivocal indications of calculus, as they are in common to ſcirrhus of the neck of the bladder *, or other ſwellings. Baglivi very properly remarks: "Scirrhus of the bladder exactly reſembles calculus of it, as I have twice obſerved on diſſection †." To aſcertain the preſence of a calculus, it is neceſſary to introduce the catheter into the bladder, or the finger into the anus, that we may be enabled with certainty to determine the matter.

* "Almoſt all theſe ſymptoms were long experienced by the author, although no calculus was diſcovered on diſſection, except a ſtony concretion incloſed in a cartilaginous capſule about the ſize of a walnut, which was fixed in the cellular membrane of the ſcrotum. A large abſceſs, indeed, was diſcovered both in the urinary bladder, and in the right kidney, which was larger than uſual; and a great quantity of pus appeared in both. Probably the diſeaſe aroſe from a ſcirrhus formed within, which afterwards undergone ſuppuration; and this indeed appeared pretty probable from the callous hardneſs which appeared in the inſide of the neck of the bladder, and from the ſmall ſcirrhi with which the neighbouring parts appeared here and there to abound." [*The German Editor, from the publiſhed account of Kanina, who was preſent at the diſſection.*]

† Lib. i. *Prax.* cap. xiii. *Quanti interſit præcepta*, &c. See alſo De Haen, P. iii. cap. iv. p. 176. *Rat. med.*

PROGNOSIS.

191. NEPHRITIS, whether it be the *true* or *falſe* ſpecies, is a complaint not to be ſlighted. For it either threatens inflammation, or is accompanied by it. Hence all the terminations of inflammation may be dreaded. Many bad conſequences, alſo, are threatened, merely by the violence of the pain and ſpaſm, to ſay nothing of the urine being retained, and flowing back into the blood. But, as hitherto no certain remedy has been found for the calculi, ſo there is no chance of recovery, unleſs in their expulſion, when that is practicable *, or in a ſurgical operation, which, however, is attended with great danger. Baglivi obſerves: "Thoſe who are cut off in conſequence of a calculus in the kidneys, die in convulſions, or delirious †."

* Delahire mentions, that a perſon paſſed a calculus as large as an olive, in conſequence of inclining himſelf forward on the ground, in order to write. *Mem. de l'acad. de Par.* tom. vii.

† *De ictero flavo.*

THE CURE.

192. THE cure of *nephritic pain* ought to be immediately attempted by bleeding, firſt from the ſuperior, and next from the inferior extremities; by linſeed, almond, or olive oil; by a gentle laxative of caſſia; by emollients of all kinds, both internally and externally employed; namely, injections, fomentations, *ſemicupium*, and, if it be

neceſſary, likewiſe by opiates. Diuretics ought to be baniſhed from the practice, unleſs they be very mild, and of an emollient or correcting kind; as well as acrid, balſamic things, and all kinds of lithontriptics, as they are called *. The drink ought to be the water of mallows, of marſh-mallows, of the flowers of mullen, of the leaves of pellitory, of liquorice-root, or the pureſt fountain-water, prepared with a ſubacid vegetable juice, or a little nitre, or oxymel; and theſe drinks are calculated for almoſt every nephritic pain, not excepting ſuch as proceed from calculi.

* Hulme publiſhed the following method for diſſolving urinary calculi. *Solvantur* xv *grana ſalis tartari in unciis quatuor aquæ puræ, et tota mixtura uno hauſto ſumatur, cui ſtatim aliæ quatuor unciæ aquæ puræ ſuperbibantur, quibus* xx *guttæ ſpiritus levis vitrioli addantur.* Both remedies are repeated four times a-day, at proper intervals; and are thus continued for three or four weeks. If any burning heat be excited in the bladder, the remedy may be ſuſpended for a few days, and in the mean time emulſions ought to be taken. If the belly be bound, the practitioner ſhould have recourſe to clyſters, and a little of the pulp of caſſia. For the drink, may be given water, and a little white wine. It is to be remarked, however, that in the bladder of the patient whom the author cured, or believed he had cured, and who died ſome time after, many calculi were found, which had not been diſſolved, as Meinard Simon du Pui, in his diſſertation *De homine dextro et ſiniſtro*, affirms.

193. Upon the pain being diſcuſſed, and the inflammation reſolved, the prophylactic means to be employed are the ſame as thoſe calculated for removing the cauſes. Generally, ſtrict attention to the diet; moderate exerciſe; the drinking of mineral waters; whey; aſſes and goats milk;

and abſtinence from vinous liquors, are ſuitable in all caſes. Venice ſoap *, the *aqua calcis* of cruſtaceous animals †, the *virga aurea*, *uva urſi*, the *radix cardui ſtellati*, *eryngo*, ononis, the leaves of the ground-ivy, of *betony*, of *acmella*, of verbeſina, and other vegetable productions, poſſeſſed of a diuretic property; as onions, radiſhes, turnips, parſnips, leeks, parſley, petroſelinum, beet, tragopogon, and the like, are adapted to calculous patients. The juice of the birch-tree exuding from the upper branches about three inches thick, opened in the ſpring-time, given every day in the morning, to the extent of ſome ſpoonfuls, to alleviate the diſeaſe, according to the teſtimony, firſt of Van Helmont and Boyle ‡, and next of Lange ‖, proves of wonderful ſervice in calculous caſes. It is an acidulous juice. It may be kept in a bottle, by receiving in the bottle when inverted the ſmoke of a thread covered with ſulphur, and ſet on fire, immediately on its being extinguiſhed, introducing the juice, and cloſing the mouth well, which is the method Cnoeffel propoſes. It may be thus preſerved for a long time. It is alſo propoſed in gouty pains. The ſand and ſmall calculi are ſucceſsfully expelled by means of the powder of juniper-berries, or by an infuſion of them with goat's milk, mixed in equal quantities, and continued for ſome days §. A certain degree of efficacy is likewiſe poſſeſſed by the root of the *pareira brava*, which is to be employed when ulcers and abſceſſes have formed in the urinary paſſages ¶. De Haen, alſo, in ul-

ceration of the kidneys, ureters, and bladder, with the ſuſpicion of the preſence of calculus, conſidered the *uva urſi* as ſerviceable **. Likewiſe, various kinds of injections †† are recommended. According to Lange, the remedy of Meibomius, conſiſting of equal parts of Venice turpentine, and extract of caſcarilla, is highly anti-nephritic. It is given to the extent of ſix grains, with the *aqua nymphæ*, until the urine becomes clear, and the pain ceaſe, which, he aſſerts, happens within a few days ‡‡. According to ſome, nitre, providing it be taken every fortnight, in proper quantity, is a preſervative againſt calculi, as Scardona remarks ‖‖. The ſame effect is likewiſe ſaid to be produced by mucilaginous and unctuous ſubſtances, as milk, and decoctions of barley and rice. Boiled meat is better calculated for nephritic patients than roaſted. The leſs auſtere wines ought to be employed; and Meade adviſes the drinking of the lighteſt and pureſt river-water §§. Lying on the back ought to be avoided; and the patient ought rather to recline on the ſide affected.

* Soap-boilers lee itſelf is conſidered as being a moſt excellent and harmleſs lithontriptic. See Home *on ſolvents*, Lond. 1783. See alſo *Journ. de med.* tom. ix. p. 264.

† See vol. iii. p. 10. and 52. and vol. iv. p. 611. *Comm. de reb. in ſcient. nat. et med. geſt.* where more remedies, as propoſed by Walpole and Whytt, are enumerated. The method of employing this water, prepared from oyſter-ſhells, is pointed out in the ſame work, p. 613. and in vol. v. of the *Edinburgh inaugural diſſertations*. Too

great a dose of it, however, as Huxham observes, induces *phthisis*, *scurvy*, and similar bad consequences, which De Haen also remarks, and which Walpole has shewn by an experiment of his own.

‡ Boerh. *Chem.* vol. ii. p. 95.

‖ *Miscel. veritat.* fascic. i. p. 21.

§ Lange, l. c. p. 22. Hoffman mentions that the bark of the root of acacia, its decoction, the rob of juniper, and of hips, possess a certain specific virtue, when the disease is accompanied with weakened tone of the kidneys. For dissolving calculi both small and great, Marian, a surgeon of celebrity, proposes the following remedy, the efficacy of which was confirmed by his own experience of it. Rec. *Semin. apii silvestr. drachm.* iv. *Florum cardui stellat. unc.* j. *siccentur in furno, et deinde fiat pulvis. Dosis semidrachma vel scrup.* ij. *semel, vel bis in die.* He likewise employed an injection of the *carduus stellatus.*

¶ Geoffroy, vol. i. p. 189. and 100. The formula is to be found in p. 443. It is as follows: Rec. *Radic. Butuæ pulver. Radic. liquirit. pulv. ana scrup. sem. balsam. copaiv. q. s. M. f. p. cap. mane et vespere.* See also Scardona *Cap. de renum, et vesicæ calculis,* § 15. If the ulcers of the kidneys and bladder be erysipelatous, as frequently happens, Hoffman assures us that all balsamic, resinous, and oily remedies, prove detrimental. Geoffroy, l. c. p. 438.

** *Rat. med.* P. iii. c. 4. P. iv. c. 7. Vid. *Barbeirac. medicament. form.* p. 163.

†† Vid. *Comm. de reb. in scient. nat. et med. gest.* vol. iv. p. 273. where mention is made of a publication of Butter, in which the method of curing calculus, by means of injections, is pointed out. See Deffault *dissertation sur les pierres, etc.* and *Ed. Med. Essays.*

‡‡ L. c. p. 30. ‖‖ Lib. iii. cap. xi. § 10. §§ *Monita, et præcepta medica,* ch. x.

CHAPTER XVI.

CONCERNING HÆMATURIA.

194. The blood is sometimes discharged from the kidneys, ureters, and bladder, along with the urine, rendering it bloody. It seldom comes off pure and

unmixed, unleſs it only proceeds from the urethra. It is named *Hæmaturia.* The cauſes are the ſame as thoſe of other hemorrhages, but eſpecially plethora; blows; calculi, or the difficult paſſage of them; violent motion; exerciſe, riding; hemorrhoids of the bladder; ulcers of the urinary paſſages; a ſcorbutic dyſcraſy; the uſe of cantharides, or the ſuppreſſion of an accuſtomed evacuation of blood which uſed to take place from other parts*.

* It may be proper to conſult the hiſtory of a caſe of hæmaturia from callus of the bladder, related by Zwinger, T. 1. *Act. Helv.* p. 13. *Baſil. edit.* an. 1757.

195. The red urine accompanying fever, or that occaſioned by the eating of madder, or the fruit of the opuntia, ought not to be confounded with bloody urine. The former is thin and clear, nor does it tinge linen rags, or paper dipt into it; the latter is turbid, thick, and frequently depoſits blood, or ſmall clots of blood, in the bottom of the veſſel, and ſymptoms of an affection of the part, from which it proceeds, are generally at the ſame time preſent.

THE DIAGNOSIS.

196. If the blood proceed from the kidneys, (which affection is then properly named *hæmaturia*), it ought to be copious and intimately mixed with the urine. Some contend that it is accompanied with pain, others that it is not. But neither of theſe is an invariable occurrence. If it

proceed from the ureters, it is paſſed ſparingly, but accompanied with ſome pain about the ilia, or loins, or umbilical region towards the hypogaſtrium, and it is generally preceded by ſuch cauſes as injure the ureters. When it flows from the bladder, it may in like manner be copious, generally collected into *grumi* and *thrombi*, ſometimes blackiſh, ſometimes florid and pure, ſometimes mixed with the urine, but not uniformly. And it is frequently conjoined with pain or heat, and likewiſe with ſome ſtrangury. But theſe and the other ſymptoms vary exceedingly.

HEMORRHAGE OF THE PENIS.

197. UNDER this head ſeems to come *hemorrhage of the penis*, or *ſtymatoſis*, which is generally omitted by pathologiſts. Cælius Aurelianus, however, ſpeaks of it in book 5. chap. 4. By it we underſtand a diſcharge of pure blood from the internal paſſage of the penis, or urethra, as alſo from the glans, or prepuce; which, while there is no deſire to make water, and without any diſcharge of urine, or effort, frequently takes place without pain from an open and eroded blood-veſſel. In this diſcharge the penis is ſometimes flaccid, ſometimes rigid. Likewiſe the quantity of blood is various; for ſometimes it is confined to a few ounces, ſometimes it amounts to a few pounds. Sometimes it ceaſes in an hour or two; at other times it continues longer. Nor are there wanting inſtances of this diſcharge frequently

recurring, or even obſerving regular periods, in the ſame manner as the menſtrual or hemorrhoidal evacuation, or only appearing during the act of coition, or of unconſcious emiſſion. Its cauſes are the ſame as thoſe mentioned elſewhere.

PROGNOSIS.

198. THE degree of danger is eſtimated by the quantity of blood effuſed; by the continuance, or recurrence of the diſcharge; by the ſymptoms, or diſeaſes with which it is conjoined; and, laſtly, by the conſideration of the part affected. The diſcharge of blood, which takes place in the penis, is attended with leſs danger. When it proceeds from the bladder and ureters, it is more alarming; while the diſcharge from the kidneys is the moſt dangerous of all. But when the diſcharge is periodical, and not immoderate, it is generally harmleſs.

THE CURE.

199. IN the cure of *hæmaturia*, the principal indications are, to remove the cauſe; to correct the blood, if it be too acrid, or otherwiſe morbid; and, laſtly, to reſtore the ſtrength of the parts from which the blood flows. We muſt, therefore, in the firſt place, inquire whether the blood be too copious, or too acrid and thin. Its quantity is immediately diminiſhed by taking

blood from the arm, by means of which the motion of the blood being attracted to the upper parts, it paſſes with leſs force to the part from which the diſcharge takes place, permitting the open veſſels to contract and unite. It may likewiſe be drawn by applying leeches to the hemorrhoidal veins, if ſuppreſſion of the hemorrhoidal or menſtrual diſcharge have given riſe to the complaint. But if, from the ſymptoms elſewhere frequently enumerated, it appear that the blood is either in a ſtate of putrid colliquation, or morbidly acrid and attenuated (unleſs great fulneſs of the veſſels be conjoined with theſe morbid ſtates), omitting the bleeding, it will be better by means of antiſeptics to obviate the putrefaction, or by demulcents and ſweeteners to oppoſe the acrimony. Among theſe the chief rank is held by acids of all kinds, both vegetable and foſſil *; the bark; ſimarouba; cooling antiſcorbutic remedies; acidulated whey; emulſions of the cold ſeeds; all kinds of mucilaginous things; gum-tragacanth, and gum-arabic; and the like. But, above all, the drinking of the coldeſt water and milk *, eſpecially ewe-milk as being thick, and prepared with ignited ſteel, or ſome juice, to oppoſe the peculiar and known acrimony. Milk is moſt ſuitable, if cantharides or acrid medicines have occaſioned the complaint. But if violent bodily motion, a blow, contuſion, or calculus have burſt or lacerated the blood-veſſels †, to thoſe remedies, which diminiſh the quan-

tity and motion of the blood, muſt be added the greateſt reſt both of body and mind, and the patient ought to be placed in a very temperate ſituation, rather inclining to cold: and theſe cautions alſo, according to circumſtances, from whatever origin the diſeaſe proceeds, ought to be attended to; and the patient's poſture ought to be ſuch that he may lie as little as poſſible on his back and loins. When the hæmaturia proceeds eſpecially from a blow, or contuſion, it is ſaid to be cured moſt effectually by a decoction of the flowers and leaves of arnica, or madder with hydromel.

* See Vol. II. § 242. and 271. There the author mentions, that the ſulphuric acid is preferable to the others in hæmaturia. See alſo the remedies propoſed in par. 70. and 71. for the cure of bloody flux.

† Le Clerc (*Hiſt. nat. de l'homme malad.* tom. ii. p. 31.) mentions, that a man, after various tedious diſorders with which he was diſtreſſed, was attacked with a hæmaturia. Poiſſonier, in conſequence of the bad ſucceſs of other remedies, conjectured, that the method of cure was to be changed, and therefore recommended to his patient to employ cow's milk, and that the cow ſhould be fed with bran and water, and nettles. By employing the milk thus prepared, the patient recovered. Three years afterwards, however, he died, in conſequence of a fungus growing to the bladder; which, Le Clerc obſerves, by no means is an objection to the medicinal property of this milk, as we know that upwards of twenty patients labouring under hæmoptoe have been reſtored by means of the ſame remedy.

We find a caſe of hemorrhage occaſioned in conſequence of ſome branch of the vena portæ being burſt by calculi, inſerted in the *Journal de Medecine* for July 1782.

200. But if *relaxation* and *atony* occaſion the complaint, or follow the hæmaturia, likewiſe a-

ſtringents ought to be employed; as the juice of plantain, and of the *urtica*, not of the ſtinging kind; decoctions of the greater comfrey, milfoil, adding troches of *carabe*, or thoſe of Gordon, which are particularly recommended by Haller and Duretus; catechu earth; Armenian bole; *fungus melitenſis*; and other remedies, of which mention was made when I ſpoke concerning hemorrhage of other parts. Nor are vulnerary remedies, and thoſe poſſeſſing a gently balſamic property, improper, if the blood be diſcharged from an ulcer or abſceſs. Likewiſe cold and gently aſtringent applications ought to be employed externally.

201. In hemorrhage of the penis, if it be truly ſuch, we ought to employ compreſſion, the affuſion of cold water, and gentle aſtringent injections, as the *aqua vulneraria*, or the *aqua Rabelii*, or that of plantain, with ſaccharum ſaturni, or crude alum *, or the decoction of bark, and the like; unleſs ſcantineſs of the blood and a periodical diſcharge of it unattended with danger, render all treatment ſuperfluous. In theſe affections, reſt, and the ſtricteſt attention to the diet, ought to be enjoined, by way of prophylaxis. Motion, exerciſe, and venery, muſt be carefully avoided. Pottage of barley and rice, and the ſoup or fleſh of river-crabs, are recommended; as alſo medicated waters in the ſummer-time.

* See in Vol. II. Par. 171. in the note, the formulæ of the *ſerum lactis aluminoſum*, and the *ſpecific* of Helvetius, as well as the

remarks which the author makes in the following note, concerning the nature and power of acids. [*Germ. Editor.*]

CHAPTER XVII.

CONCERNING DIABETES.

202. FROM hæmaturia we proceed to the exceſſive diſcharge of urine, not a diſcharge of urine of any kind, (for frequently during the reſolution of dropſy or acute diſeaſes, or after the perſpiration has been checked, and after hypochondriacal and hyſterical ſpaſms, it is diſcharged in great quantity with impunity), but that kind which reduces the ſtrength, exhauſts the body, and diſtreſſes the patient with unquenchable thirſt*. This diſeaſe in Greek is named *diabetes*. In this complaint, the urine is either paſſed more copiouſly than the quantity of drink taken, or of ſerum in the blood, would require, and it is diſcharged without pain; or it reſembles in taſte, ſmell, and colour, the drink which is taken, little or nothing changed; or it is very ſimilar to the chyle itſelf. Hence, in ſome patients it is watery and crude; in others pale, turbid, or thick; ſometimes ſweet, as if impregnated with honey †; ſometimes it is white and inodorous; and ſometimes it is paſſed with a ſmell like that of violets.

* That urine which is diſcharged in unuſual quantity, in con-

ſequence of the abſorption of the humidity of the atmoſphere, as occaſioning no injury, is evidently to be excluded from this place.

† When urine in taſte and ſmell reſembles honey or ſugar, according to ſome authors, it conſtitutes the genuine diabetes; and it is named by Sauvages, on account of being familiar to the inhabitants of Great Britain, *Diabetes Anglica*. See Targioni *Opuſcoli fiſico-medici*, T. ii. p. 53.

203. Theſe various diſcharges of urine are generally comprehended under one name. But it is better, with Ettmuller, to divide them into various ſpecies, namely, into the *diabetes vera*; into the *notha* or *ſpuria*; and into the *chyloſa* *. The *true ſpecies* is the ſpeedy tranſmiſſion by urine of the drink little or nothing changed; for *diabetes* is derived from Διαβαινω, ſignifying *cito tranſeo*. The *baſtard*, or *ſpurious*, ſpecies, is that in which more urine is voided, than in proportion to the quantity of fluids taken. In this ſpecies there ſeems to be preſent a colliquation of almoſt the whole blood. Laſtly, in the third ſpecies, chyle is paſſed along with the urine, or in place of it. In the *firſt* ſpecies, therefore, the *crudity*, rather than the quantity; in the *ſecond*, the exceſſive quantity, claim our conſideration. Between theſe an intermediate degree, as it were, is conſtituted by that ſpecies which is diſtinguiſhed by the peculiar quality of the urine, and the chylous juice.

* Bary divides diabetes into four ſpecies. The *firſt* he compares with diarrhœa, and ſays that in it the chyle paſſes unchanged by the kidneys. He derives the *ſecond* from dilatation of the *tubuli uriniferi*, in conſequence of ſome of them being compreſſed by calculi, thus giving riſe to the dilatation of others. The *third* he derives

from colliquation of the blood, in conſequence of depravation of the bile. His *fourth* is the *nervous* and *convulſive* ſpecies. *A Treatiſe on the three different digeſtions*, &c. Lond. 1759, ſect. iii. ch. 3.

204. The cauſe of the diſeaſe cannot be uniform. Sometimes debility of the liver and chylopoietic viſcera; ſometimes a ſerous colliquation of the blood; ſometimes laxity and atony of the kidneys; and ſometimes ſeveral of theſe concur together. But the remote cauſes are, watery warm drink, in too great quantity and too long continued; the abuſe of wine; drinking too much of the water of hot ſprings, eſpecially that which is very diuretic; the more powerful diuretics *; the long-continued employment of mercurial and reſolving remedies; acrid and diſſolving poiſons; too active or indolent a life; immoderate venery; moiſt ſtates of the air; cooling of the body; diſeaſes of the kidneys, as nephritic pains, abſceſſes, and calculi; great irritation of the nerves, according to Whytt †, as in dentition, obſtruction of the liver ‡, and ſpleen, preceding acute or chronic diſeaſes; the bite of the *dypſas* ‖; to which others § add a colluvies of the primæ viæ; bad digeſtion, and other ſimilar cauſes; but in theſe caſes the diabetes is ſympathetic.

* According to Hildanus, Willis, and Liſter.

† See Tiſſot *Epiſt. var. argum.*

‡ Meade, in perſons who had died of diabetes, always found that the liver aſſumed ſomewhat of a ſteatomatous appearance; "becauſe the thicker and oily parts which are leſs ſubdued in cold bodies are fixed in the liver." *De viper.* p. 117.

§ Aretæus, in conſequence of the bite of the ſpecies of ſerpent

named *dypſas*, obſerved a diabetes ariſe, as is mentioned by Aetius, tetrab. iv. ſerm. i. cap. 22. Aulus Tuſcus, one of the ſoldiers of Dato, in Africa, as we are informed by Lucan, died in conſequence of the bite of this ſerpent. It is a ſerpent like a viper. This diſeaſe is named *dipſanon*, (a δίψις, *ſitis*), on account of its occaſioning thirſt. See *Paul. Aeginet.* lib. iii. and *Bomar. diction. de chymie*, &c.

§ M. Baume *Lettre a l'auteur du Journal.* See vol. lvii. of the *Journ. de Medecine de Paris.*

DIAGNOSIS.

205. In whatever manner diabetes attacks a perſon, the nouriſhment is withdrawn from the body; hence great emaciation, thirſt, ſometimes hectic fever, and dryneſs of the internal parts follow. Moreover, the loins and haunches are frequently pained; the viſcera are affected with heat; the ſaliva is frequently ſpit out; in ſome inſtances the teſticles and fat become ſlightly ſwelled; or ſome patients frequently even fall into peripneumony *, or difficult deglutition, in conſequence of which they are at length cut off.

* Locke (as Cocchi relates, *Bagni de Piſa*, l. 271.) ſaw ſeven patients labouring under diabetes, who, after two or three years, died of peripneumony, and ſpit up blood one or two days before their death. I myſelf ſaw the ſame thing in a patient of my own.

PROGNOSIS AND CURE.

206. The complaint, when it is ſlight in degree, is frequently curable; but when it has attained a height, it ſcarcely yields to any remedies, eſpecially when it takes place in debilitated

and cachectic habits, in old people, and such as have indulged in venery to excess. It is extremely dangerous when it takes place in ardent or malignant fevers before the crisis. The treatment must be accommodated to the causes of the complaint. Upon the whole, it is performed by correctives, and such remedies as restore to the blood its proper crasis, and strength to the solids, and chiefly to the kidneys. Hence all incrassants, as the *serum lactis aluminosum* *, cow's milk †, boiled with the water of plantain, or with the *philonium*; calf-feet jelly, or that of sheep; the soup of frogs; the cream of rice, barley, or oats; farinaceous pottage of sago, of saleb-root, and orchis; emulsions of cold seeds, and sweet almonds; gum-arabic and gum-tragacanth; and anodynes of *nymphæa*, purslane, and white poppy, are to be employed. To these must be added the astringents and strengthening remedies; but especially chalybeates, tincture of bark, of carrots, old conserve of roses, of quinces, of sorbi, and the like. What has been asserted concerning tincture of cantharides in the cure of diabetes †, scarce deserves credit. In the diabetes occasioned by diuretics, Vogel recommends frequently giving rhubarb, conjoined with soluble tartar, to the extent of half a dram. Meade, and other English writers, recommend the Bristol water, which is very like lime-water ‡. Willis even recommends lime-water itself ‖, to which Macbride proposes adding a portion of oak-bark §. Baglivi praises the pills of catechu ¶;

others the chalybeate waters. Cocchi prefers the acidulous waters with a milk-diet; as alſo ice-cold water **. It is likewiſe not improper to employ external aſtringents, to be applied to the region of the kidneys ††. From this it appears what the nature of the diet and regimen ought to be. The drink ought to be prepared with ſteel, and ſtrong wine may be employed.

* Meade, cap. ix. ſect. ii. *Monit. et præcept. med.* It is made by means of three drams of pulveriſed alum, thrown into four pounds of milk, gradually boiled. It is taken to the extent of four ounces, three times a-day. Briſban, however, aſſerts that he found both the *ſerum aluminoſum* and the peruvian bark, as well as other aſtringents, prove fruitleſs. But he found emulſions of ſweet almonds with gum-arabic ſerviceable. *Select caſes in the practice of medicine*, &c. London, 1772.

† I have thought proper to transfer to this place the hiſtory of a ſpurious diabetes treated by the author, and which we have extracted from his Italian Journal for the year 1782, not only that the utility of the milk-diet may appear, but likewiſe that it may be ſeen, that in this diſeaſe bleeding is allowable and advantageous. The hiſtory is as follows:

"In the month of May of this year (1782), I was called to an old man of ſeventy, of a large, ſanguine, and bilious habit, who, after having ſcarce recovered from an attack of hemiplegia, being ſeized with ſpurious diabetes, voided his urine in ſuch quantity as to exceed 160 or 170 ounces daily, though his drink did not equal the third of that quantity. His urine was natural and tranſparent. But two months ago all remedies had been employed to no purpoſe. I, therefore, immediately directed him to take, at different intervals, rhubarb conjoined with the pulp of tamarinds, to purge him, and that blood ſhould be drawn from the foot, becauſe he had begun to be attacked with aberrations of judgement, approaching to madneſs, and the pulſe was ſufficiently ſtrong and hard. I then preſcribed continuing the uſe of the milk longer, adding the tincture of bark. By theſe means the diabetes was very gradually diminiſhed; and, at the expiry of a month, during which he employed

theſe remedies, he intirely recovered, and went abroad. With reſpect to blood-letting in diabetes, I would obſerve, that not long ago I attended a perſon labouring under the ſame diſeaſe, who had alſo been long ſubject to ſuppurations of the bladder, and probably alſo of the kidneys, in whom I ordered bleeding ſeveral times, whenever he was ſeized with fever, and a difficulty of breathing nearly as great as in peripneumony; and it was always attended with the greateſt advantage. The blood appeared covered with the buffy coat, and correſponded exactly with the hard and ſtrong pulſe."

† Morgagni recommends the tincture of cantharides, which is compoſed of half an ounce of the infuſion of cantharides in a pound of the elixir of vitriol. The doſe is from 15 to 30 or 40 drops twice or thrice in a day, drinking over it the Briſtol water. Briſban, alſo, recommends the ſame tincture, becauſe he ſuppoſes that diabetes ariſes from paralyſis of the renal nerves.

‡ *De viper.* p. 118. ‖ Cap. *De diabete.* § *A methodical introduction to the theory and practice of phyſic,* Lond. 1772.

¶ Tiſſot recommends rubbing the whole body with oil, accompanying this with the internal employment of ſtrengthening remedies, and eſpecially of rhubarb; for the diſeaſe ariſes from an increaſed cuticular diſcharge, which is proved to be exceſſive by the obſervations of ſeveral authors, and eſpecially of Melz and Kratzenſtein, *Epiſt. var. argum.* p. 141. where he likewiſe adds, "That cantharides applied to the ſkin increaſe exhalation, and diminiſh inhalation; that they produce revulſion, and reſtore the function of the ſkin." Are they calculated, therefore, for diabetes?

CHAPTER XVII.

OF INCONTINENCE AND SUPPRESSION OF URINE.

207. WHEN the urine is diſcharged by a perſon unconſciouſly, and without any ſtimulus, the

diſeaſe is named *incontinence of urine*, or the *enureſis* of Sauvages, which may be defined to be an *involuntary diſcharge of urine*. It occurs principally in children during ſleep; for their animal powers being then lulled, either the ſphincter is reſolved; or, being invited by the uſual ſtimulus to make water, as when awake, they diſcharge their urine unconſciouſly. It is likewiſe a diſeaſe of frequent occurrence in paralytic, epileptic, delirious, and apoplectic perſons, and often takes place immediately before death. Likewiſe old perſons, thoſe labouring under hernia, pregnant and puerperal women, perſons labouring under fiſtula, or calculus of the bladder; ſuch as have ſuffered the operation of lithotomy, or luxation of the vertebræ, and are affected with other morbid ſtates of the urinary paſſages, are liable to this diſeaſe. Hence the *enureſis infantum*, or *nocturna; paralytica; ſpaſtica; calculoſa; primaria; ſecondaria; idiopathica;* and *ſymptomatica* proceed.

208. The principal cauſe is either too great laxity of the ſphincter of the bladder; or a relaxation, or a violent and ſpaſmodic contraction of its fibres, which the reſiſtance of the ſphincter cannot ſufficiently oppoſe. The remote cauſes may be eaſily collected from what has already been ſaid. An inſtance of an oppoſite affection to this is afforded by *iſchuria*, or *ſuppreſſion of the urine*; of which there are two kinds, namely, the *true* and *falſe*. It is named *true*, when the whole urine is collected and retained in the bladder,

without any of it paſſing off; but *ſpurious*, when the bladder is empty, and no urine paſſes from the kidneys into the bladder, either becauſe it is not ſecreted in them, or if it be, it does not proceed through its paſſage freely.

209. It is not ſecreted in the kidneys, or, when ſecreted, it does not paſs down into the bladder, firſt owing to a faulty ſtate of the blood, in its being too thick and viſcid, or paſſing too copiouſly to the kidneys; or in its paſſing through them too rapidly, or being kept off by them, in conſequence of compreſſion of the emulgent veſſels, from their being obſtructed by an aneurysm or polypus; and, ſecondly, owing to a fault of the kidneys, if the *tubuli uriniferi* be ſpaſmodically affected, or labour under atony and paralyſis; or if the kidneys be in a ſtate of turgeſcence, on account of the return of the blood, by the emulgent veins being obſtructed, or if they be compreſſed externally by fat, by fæces in the colon, by hydropic water, or any other cauſe, and cannot perform their function; or if they be obſtructed by calculi, by ſand, by viſcid and thick humours, by pus, by inflammation, by an abſceſs, by a ſcirrhus, or other kind of tumour. Laſtly, the urine will not be able to paſs down to the bladder, if ſimilar morbid ſtates affect the ureters, obſtructing the paſſage of the urine, and eſpecially if their extremities at the mouths have become united.

210. The urine, when it paſſes down into the bladder, is prevented from being diſcharged, if the irritability or nervous power of the latter be languid or deficient, as happens in the paralyſis of it; if the other compreſſing powers do not affect it, as in paralyſis, or too great laxity of the abdominal muſcles; if the bladder, in conſequence of immoderate dilatation, have loſt its elaſticity and tone; if it fall into the ſcrotum, as happens ſometimes in hernia of the ſcrotum, or cyſtic hernia, which Ruyſch and Stoll * have obſerved; if the neck of the bladder have become hard, cartilaginous, or wrinkled †, as happens in advanced age; if the inner coat of the bladder form a prolapſus ‡, or be preternaturally diſtended in conſequence of varicoſe veſſels; if the ſphincter become ſpaſmodically contracted, and do not yield to the powers propelling the urine; if the urethra, either at the beginning, or in the courſe of it, be obſtructed by a calculus, by mucus, by gluten, by thick pus, by grumous blood ‖, or by other foreign bodies; or if it be ſtraitened or ſhut by inflammation, by a callus, by tumours, by ſcirrhi, by carunculæ and fungous excreſcences growing in it, or in its neighbourhood, namely, in the uterus, vagina, inteſtinum rectum, *veſiculæ ſeminales*, in the proſtate and in Cowper's glands, in the perinæum §, in the ſcrotum, and in the penis; or even in conſequence of theſe parts being any how remarkably ſwelled. To all of which we may add

wounds of the kidneys, of the ureters, and of the bladder, or even the violent burſting of theſe parts ¶.

* Beſides Ruyſch, Stoll, I ſay, obſerved that; for in part 3. of his *Rat. med.* p. 429. he mentions an inſtance of ſcrotal hernia, in which the bladder of urine was contained, which had paſſed down between the recti muſcles of the abdomen, which were ſeparated from one another above the *oſſa pubis*.

† I myſelf have obſerved this in Jo. Bapt. Guidi, a phyſician of Fayence, and the ſame thing was noticed by Portal (*Mem. de l'acad. de Paris*, &c. ann. 1770. 1771. p. 236.); and Gilchriſt *(Edinburgh Phyſical Eſſays.)*

‡ Bordenau ſaw a man's bladder divided, as it were, into two ſacs. Of theſe one was a *hernia of its inner coat*, ſtretched acroſs through the interſtices of the muſcular one. The muſcular fibres were ſeparated from one another. The muſcular fibres of the bladder are only *longitudinal*, there are no ſtrong *circular* and *tranſverſe* ones binding them together; they therefore readily ſeparate from one another. Hence the ſpaces into which the inner coats inſert themſelves are chiefly at the ſides; becauſe there the bladder is not ſupported by any thing, as before and behind. *Hiſt. acad. ſcient. Paris, ann.* 1775. In the ſtomach, however, although herniæ of it ſometimes happened, as I have already ſhewn in par. 52. they are not formed by the inner coat, becauſe in it there are circular fibres diſpoſed in various directions. Petrioli *(Corſo anatom.* p. 92.) has an obſervation from the phyſician De Rubeis, concerning a girl who had laboured for ſeveral days under an iſchuria of the bladder, all remedies, not even with the exception of the catheter, having been employed to no purpoſe. Upon the third day of her treatment the lower part of the abdomen became ſwelled, and was affected with ſuch excruciating pain, that ſhe ſeemed to be threatened with inſtant death. But upon the fourth day, on trying with a great effort to make water, ſhe paſſed by the urethra an oblong membrane, flaccid and ſoft, which was improperly taken for the bladder in a ſtate of putrefaction. But it was in fact the mucous membrane of the bladder ſeparated from the ner-

vous coat, on account of its thickneſs, and paſſed intire, as it is frequently voided by calculous patients in pieces. The young woman afterwards made water with eaſe, and recovered her perfect health. Rohault, alſo, *(Mem. de l'acad. de Paris)*, ſaw parts of the bladder of urine ejected in *iſchuria veſicalis*.

‖ Monſ. de la Perche ſaw and cured a caſe of *iſchuria veſicalis*, which had ariſen from clots of blood adhering to the bladder, on account of the opening of varicoſe veſſels in its neck. He extracted the above-mentioned blood by means of a ſyringe, to which he had adapted a ſmall clyſter, ſurrounding the part at which they were united with wax, and he employed it after the manner of a tube for breathing. He did the ſame thing alſo in another ſimilar caſe. See *Hiſt. de l'acad. roy. de med.* T. ii. p. 242. and 244. Haller, in an iſchuria of this kind, propoſes the dividing of the perinæum as in lithotomy.

§ Piplet the younger *(Mem. de l'acad. roy. de chirurg.* T. xi. p. 283.) deſcribes a ſtrangury from a hernia of the bladder in the perinæum, as follows: "It was preceded by a contuſion, or a great exertion; a pain came on in the perinæum, at firſt acute, but afterwards obtuſe; the making of water was difficult, and it was ſcantily voided; and upon the perinænm being preſſed by the hand, the diſcharge of urine became more eaſy. If the body was bent forward, there appeared in the perinæum a ſoft, round, or oblong ſwelling, which diſappeared upon preſſure in the horizontal poſture. It was near the urethra, and a ſhort way from the anus. The cauſe of it was the ſeparation of the fibres of the muſcles which raiſe the anus, and of the muſculus tranſverſus, which ſhut the pelvis below.

¶ During a difficult labour, in the caſe of a woman of thirty-eight years of age, who was brought to bed for the firſt time, the bladder was burſt towards its upper part, in conſequence of which a copious effuſion of urine within the abdomen took place. She died upon the ninth day after delivery. See the obſervations and inquiries of the Medical Society of London, vol. iv. p. 58. A caſe of fatal inverſion of the uterus, with rupture of the bladder, may be found in *Comment. de reb. in ſcient. natur. et med. geſt.* Lipſ. vol. xviii. P. iii. p. 409.

DIAGNOSIS.

211. THE *iſchuria notha*, or *ſpurious iſchuria*, is known to be preſent, if the bladder be not raiſed up into a ſwelling, if no pain be perceived about the pubes, and no weight about the perinæum, and if, on introducing the catheter into the bladder, no urine be found. On the other hand, in the *true* ſpecies of the complaint, there is an uneaſy ſenſe of weight, pain, and ſtretching about the loins, or ſymptoms of the kidneys and ureters being affected betray themſelves; frequently, alſo, in conſequence of the retention or regurgitation of the urinous ſerum, to theſe ſymptoms are added, ſtraitening and anxiety of the præcordia; torpor, and extreme drowſineſs; fetid breath; an urinous ſmell in the ſweat; a ſwelling of the body and face, as in anaſarca; and many other ſevere ſymptoms which accelerate the patient's death.

PROGNOSIS.

212. *Incontinence of urine*, according to the variety of its cauſes, is attended with more or leſs difficulty. That which in children is called *nocturnal*, in proceſs of time, for the moſt part, goes off of its own accord. In adults and old people it is ſeldom curable; at any rate, it proves of long continuance and obſtinate. But the *iſchuria*

vera occaſions greater trouble and danger than the *ſpuria*, principally on account of the danger of inflammation; nor does it ceaſe until the cauſes be removed. The *ſecondary* ſpecies is removed upon curing the diſeaſe, upon which it depends, as well as the obſtructions, if theſe admit of being removed.

THE CURE.

213. LAXITY, atony, and paralyſis of the ſphincter, require ſtrengthening and ſtimulant remedies, ſuch as peruvian bark, *uva urſi*, virga aurea, ſteel, turpentine, amber, maſtich; while it is proper to apply externally, both to the perinæum, os ſacrum, and lumbar ſpine, the etherial oil of turpentine, of amber, and ants; the antiparalytic balſam of Gherli; the dropping of medicated water; and the like. Nor muſt the affuſion of cold water be neglected. Bliſters, as every perſon knows, are recommended in all kinds of palſy, eſpecially applied to the origin of the nerves which go to the part affected. On which account, as when applied to the nape of the neck in palſy of the ſuperior extremities, they are productive of the greateſt ſervice; ſo, for the ſame reaſon, Dickſon* ſuppoſes that in paralyſis of the lower extremities, they ought to be applied to the os ſacrum; and he points out the advantage of this remedy in incontinence of the urine, proceeding from paralyſis of the ſphincter, in ſeveral

caſes which he adduces. Fothergill alſo confirms the fact by two inſtances †. Hoffman informs us, that children and old people labouring under atony derive benefit from milfoil, veronica, ground-ivy, ſtraw-berries, agrimony, and the bark of the root of acacia. When children make water during ſleep ‡, they ought to abſtain from drinking in the evening, or at leaſt to uſe it very ſparingly, or they ought to be occaſionally awaked, and reminded to make water. If ſpaſm of the bladder, or convulſive affections occaſion the incontinence, anodynes and antiſpaſmodics are the moſt proper remedies. The other cauſes are removed by the remedies accommodated to them.

* *Medical obſervations and inquiries, by a ſociety*, vol. ii. p. 311. vol. iii. p. 102. † *Ibid.* p. 138.

‡ Leger of Paris cured a nocturnal incontinence of urine in the caſe of three girls, of thirteen, fifteen, and twenty-four years of age, in the following manner: Rec. *pulv. cantharid. gr.* vi. *extract. borag. drachm.* ij. *miſce probe et divide in partes æquales num.* xxiv. *Detur una doſis ſingulis noctibus.* In the young woman of twenty-four years of age, the remedy was continued for ſeventy days, and the doſe of cantharides was occaſionally increaſed. If any ardor urinæ be experienced during the employment of this remedy, a decoction of linſeed is recommended. See the *Journ. de med.* January, 1781, p. 72.

214. In the *iſchuria vera*, ſometimes emollients, the ſteam of hot water and ſemicupium; ſometimes opening the hemorrhoidal veins, injections, and gentle laxatives; ſometimes ſtimulants, and ſtrengthening and antiſpaſmodic remedies; ſometimes dilating bougies, inducing ſuppuration, and

gently cleanſing, according to the variety of the cauſes, are the moſt proper remedies. But the chief is, the frequent extraction of the urine by means of a catheter, a practice which ought to be continued for a length of time. If the catheter cannot be introduced into the bladder at all, a paſſage muſt be procured for the urine from the perinæum, or from the rectum, (which is ſafer), by introducing a trocar. But diuretic and acrid things muſt be avoided *. Tode removed an *iſchuria veſicalis*, occaſioned by retaining the urine too long, by anointing the perinæum and hypogaſtrium with the boiled oil of chamomile, with which ſome of the diſtilled oil of the ſame had been mixed. It was followed by incontinence of urine, or the *enureſis* of Sauvages, which was removed by the affuſion of cold water †. Iſchuria frequently ariſes from laxity and atony of the bladder itſelf, ſo that it cannot be overcome by the reſiſtance of the ſphincter. Mackenzie, in a caſe of this kind, in which bleeding, clyſters, ſemicupium, and other emollient remedies, had been employed to no purpoſe, had recourſe to the peruvian bark with the beſt effect ‡. In the *ſpurious* ſpecies again, nearly the ſame remedies as in the genuine are recommended, except the employment of the catheter, which, as appears, is ſuperfluous. Likewiſe ſuch remedies as gently excite a flow of urine, relax and open the paſſages, and attenuate the thick humours, may be employed.

* See par. 284. Vol. iii. where the author mentions, that diuretics may be of ſervice only in the *ſpurious iſchuria*, in which the urine is deficient, on account of its not being ſecreted in the kidneys; as here alſo, towards the end of the paragraph, he has hinted. [*Germ. Edit.*]. † *Collect. ſoc. med.* Hauniens, vol. i. p. 219.

In the Italian Journal of our author for the year 1784, at the end of it, we find the following obſervation. [*Germ. Edit.*] "In the month of Auguſt, Count Salazzar, the father, laboured under an *iſchuria veſicalis*. The cure was performed by bleeding, clyſters, fomentations, ſemicupium, peruvian bark, by the frequent extraction of the urine, and by ſimple diluent anodynes. After fifteen days had elapſed, ſome ſuppuration took place; for, on a quantity of pus being diſcharged, the urine was voided freely. The cauſe of the complaint appeared to me to conſiſt in a tubercle growing in the neck of the bladder."

‡ *Edin. phyſ. eſſays*, 1758, p. 81. and Jo. Bap. Videmari, of Milan, in his work entitled, *De rariori quadam iſchuria ſpecie*.

FINIS.

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